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2074837

Ms. Sandy Olinger
Project Manager
Department of the Army
Aviation and Missile Command
Building 3206 Redstone Arsenal
Huntsville, Alabama 35898

SUBJECT: Addendum No. 1, Removal Action Work Plan, Toxic Substances Control Act (TSCA) Polychlorinated Biphenyl (PCB) Waste, Building 3, St. Louis Army Ammunition Plant, St. Louis, Missouri

Dear Ms. Olinger:

The subject work plan proposes to cap, 10 parts per million (ppm) PCBs in concrete with six feet of clean soil. Based on the risk assessment and the fact that the PCB regulations allow cleanup in soil to 10 ppm with a 10 inch cap of clean soil, it appears the PCBs in the concrete would not pose a hazard to health and environment.

Pursuant to 40 C.F.R. Part 761.61(c) the Environmental Protection Agency (EPA), Region 7, hereby grants approval of the proposed work plan and approval for the Department of the Army to transfer the "footprint" of Building 3 in commerce, contingent on removal of all PCBs to the level specified in the subject Removal Action Work Plan.

Be advised that an authorized Region 7 inspector may come on the site during the remediation to observe, and may take samples or splits of the contractor's samples at his discretion.

If you have questions, please contact David Phillippi of my staff at (913) 551-7395.

Sincerely,

William A. Spratlin
Director
Air, RCRA, and Toxics Division

ARTD/CRIB/D.PHILLIPPI/V.MATTHEWS/X7353/3-21-2002/H:SLAAP.PMT

D. PHILLIPPI
CRIB

J. HEIMAN
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A.SPRATLIN
ARTD

date 12/19/2002



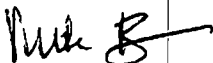
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

FEB 05 2007

MEMORANDUM

SUBJECT: Magnesium Corporation of America Discovery Order

FROM: Mike Beringer 
Toxicologist
Environmental Services Division

TO: Ann Stephanos
Attorney-Advisor
Office of Enforcement and Compliance Assurance

As requested, Region 7 has identified the CERCLA, RCRA, and TSCA documents that comply with the discovery order in the U.S. v. Magnesium Corporation of America litigation. We have compiled the documents for each program area on a separate compact disc, along with an index, that were identified as of January 31, 2007 (see attachments). If you have any questions regarding these documents, please let me know at 913-551-7351, or call the individual contact for each program area.

cc: Stephanie Doolan, ARTD/RCAP
Bob Richards, CNSL/RGAE
✓Mazze Talley, ARTD/CRIB
Jolleen Werst, SUPR/STAR

Attachments



Jolleen
Werst/SUPR/R7/USEPA/US

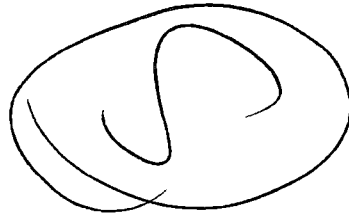
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To Mазzie Talley/ARTD/R7/USEPA/US@EPA
cc
bcc
Subject USM Documents

Mазzie

Martha Leblanc will be bringing to you a CD of the documents you submitted and the original documents you gave to us for processing.

Thanks
Jolleen Werst
Environmental Protection Agency
SUPR/STAR
901 North 5th Street
Kansas City, KS 66101
913-551-7108
913-551-7063 (fax)



SEPARATOR
PAGE

**ADDENDUM NO. 1
REMOVAL ACTION WORK PLAN
PCB TSCA WASTE
BUILDING 3
ST. LOUIS ARMY AMMUNITION PLANT
ST. LOUIS, MISSOURI
(Revision 1)**

**PRE-PLACED REMEDIAL ACTION CONTRACT
CONTRACT NO. DACW41-00-D0019
TASK ORDER NO. 0002**

Submitted to:

**Department of the Army
U.S. Army Engineer District,
Kansas City Corps of Engineers
700 Federal Building
601 East 12th Street
Kansas City, Missouri 64106**

**Department of the Army
Aviation and Missile Command
Building 3206 Redstone Arsenal
Huntsville, Alabama 35898**

Submitted by:



**Arrowhead Contracting, Inc.
12920 Metcalf Avenue, Suite 150
Overland Park, Kansas 66213**



2074843

June 24, 2002



June 24, 2002

Ms. Sandy Olinger (AMSAM-EN)
Building 3206 Redstone Arsenal
Huntsville, Alabama 35898

Addendum No. 1 – Removal Action Work Plan (Rev. 1)
Removal of PCB TSCA
Building 3, St. Louis Army Ammunition Plant
Contract No. DACW41-00-D-0019

Dear Ms. Olinger:

This letter transmits Revision 1 of Addendum No. 1 to the Removal Action Work Plan (RAWP) for PCB TSCA Waste at Building 3, St. Louis Army Ammunition Plant (SLAAP), St. Louis, Missouri. This document incorporates the comments to Revision 0 (draft) submitted by representatives from the Environmental Protection Agency (EPA), Missouri Department of Natural Resources (MDNR), and Aviation and Missile Command (AMCOM). A distribution list for the Addendum is attached.

Please note that Arrowhead will be mobilizing on July 8, 2002 to begin the field work for completing PCB mitigation activities at Building 3, as addressed in the Addendum. Figure 7-1 presents the current proposed schedule for the remainder of the project.

If you should have any questions regarding our responses, please call us at (913) 814-9994.

Sincerely,

A handwritten signature in cursive script that reads "Greg Wallace".

Greg Wallace
Project Manager

A handwritten signature in cursive script that reads "Scott Siegwald".

Scott Siegwald
QA/QC Manager

Enclosures

Distribution List
Addendum No. 1 – Removal Action Work Plan
PCB TSCA Wastes
Building 3, St. Louis Army Ammunition Plant

Organization/Company Representative	Organization/Company	Number of Copies
Ms. Sandy Olinger	U.S. Department of the Army, Aviation and Missile Command	3
Mr. Bradley Eaton	U.S. Army Corps of Engineers, Kansas City District	4
Mr. Ray Allison	U.S. Army Corps of Engineers – Ft. Leonard Wood	1
Mr. Dave Phillippi	U.S. Environmental Protection Agency	1
Mr. Tom Lorenz	U.S. Environmental Protection Agency	2
Mr. Jim Harris	Missouri Department of Natural Resources	1
Mr. Greg Wallace	Arrowhead Contracting, Inc.	3

**ADDENDUM NO. 1
REMOVAL ACTION WORK PLAN
PCB TSCA WASTE
BUILDING 3
ST. LOUIS ARMY AMMUNITION PLANT
ST. LOUIS, MISSOURI
(Revision 1)**

**PRE-PLACED REMEDIAL ACTION CONTRACT
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Submitted to:

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June 24, 2002

Table of Contents

List of Tables	iv
List of Figures	iv
List of Appendices	v
List of Acronyms.....	vi
List of Acronyms (cont.)	vii
1.0 Introduction.....	1-1
1.1 Project Summary.....	1-1
1.2 Project Roles and Responsibilities.....	1-7
1.3 Work Plan Organization	1-8
2.0 Background Information	2-1
2.1 Site History and Previous Investigations	2-1
2.2 Physical Features of Building 3	2-1
2.3 Removal Action Objectives	2-1
2.4 Nature and Extent of PCB TSCA Waste	2-4
2.4.1 Contamination Outside Building Near Chip Chute.....	2-4
2.4.2 Contamination Beneath Basement Concrete Flooring	2-5
2.5 Other Materials Requiring Special Handling and Disposal	2-5
2.5.1 Asbestos Containing Materials (ACM).....	2-6
2.5.2 Lead-Based Materials	2-7
2.5.3 PCB Special Wastes	2-7
2.5.4 Fluorescent Light Bulbs and Ballasts	2-9
2.5.5 Miscellaneous Fluids and Sediments	2-9
2.6 Risk-Based Cleanup Levels	2-9
3.0 Removal Action Field Activities	3-1
3.1 Site Preparation.....	3-1
3.1.1 Site Administration Facilities.....	3-1
3.1.2 Restricted Areas and Exclusion Zones.....	3-2
3.1.3 Decontamination Areas	3-2
3.1.4 Site Security	3-3
3.1.5 Haul Routes	3-3

3.2	Miscellaneous Waste Characterization and Disposal	3-3
3.3	ACM and Piping Removal.....	3-4
3.3.1	ACM Removal	3-4
3.3.2	Sewer Piping Removal	3-8
3.4	Building Demolition and Removal	3-9
3.5	TSCA Waste Removal.....	3-12
3.5.1	Basement Concrete Flooring and Underlying Materials	3-12
3.5.2	Materials Outside the Building Near Chip Chute	3-13
3.5.3	Basement Soil Flooring and Soil in Chip Chute Area.....	3-14
3.6	Additional Soil and Concrete Remediation	3-14
3.7	Water Management During Excavation Activities	3-16
3.8	Soil Confirmation Sampling	3-16
3.9	Site Restoration.....	3-18
3.9.1	Backfill	3-18
3.9.2	Seeding	3-19
3.10	Material Handling	3-20
3.10.1	On-Site Staging	3-20
3.10.2	Load-Out	3-20
3.10.3	Off-Site Transportation and Disposal.....	3-22
3.11	Field Documentation.....	3-22
3.11.1	Field Logbook	3-23
3.11.2	Photographs.....	3-23
3.11.3	Recordkeeping.....	3-24
4.0	Regulatory Requirements.....	4-1
5.0	Site Safety and Health	5-1
6.0	Contractor Quality Control	6-1
6.1	Definable Features of Work.....	6-1
6.2	QC Inspections.....	6-1
6.3	QC Inspections.....	6-1
6.3.1	Preparatory Inspections	6-2
6.3.2	Initial Inspections	6-2
6.3.3	Follow-Up QC Inspections.....	6-3
6.3.4	QC Inspection Documentation	6-3

6.4	Daily QC Reports.....	6-4
6.5	Correction Actions.....	6-4
6.5.1	Nonconformance Reporting.....	6-4
6.5.2	Nonconformance Disposition and Tracking.....	6-5
6.5.3	Field Work Variances.....	6-5
7.0	Project Schedule.....	7-1
8.0	References.....	8-1

List of Tables

Table	Title
1-1	Classification and Disposition of Waste Materials at Building 3
1-2	Summary of Project Organization and Responsibilities
2-1	Estimate of TSCA Waste Quantities
2-2	Estimate of PCB Special Waste Quantities
3-1	Summary of Soil Confirmation Samples

List of Figures

Figure	Title
2-1	PCB Contamination Outside Building 3, Near Chip Chute
2-2	PCB Contamination Associated with Basement Concrete Flooring
2-3	Areas Identified for the Removal of PCB Special Wastes – Concrete Flooring on First and Second Floors
2-4	Areas Identified for Removal of PCB Special Wastes – Various Features in Basement
3-1	Areas Identified for Removal of TSCA Wastes – Concrete Flooring in Basement and Area Outside Building 3
3-2	Areas Identified for Removal of TSCA Wastes and PCB Special Wastes – Soil Flooring in Basement
3-3	General Site Demolition Plan
3-4	Soil Confirmation Sample Locations
7-1	Project Schedule

List of Appendices

Appendix	Title
A	Safety, Health, and Emergency Response Plan (SHERP)
B	Specifications <ul style="list-style-type: none">• Section 02220 – Demolition• Section 02315 – Excavation and Backfill
C	Risk-Based Determination of PCB Cleanup Levels

List of Acronyms

ACM	asbestos-containing material
AMCOM	Aviation and Missile Command
ARAR	applicable and relevant and appropriate requirements
APR	air-purifying respirator
CAR	corrective action report
CENWK	U.S. Army Corps of Engineers, Kansas City District
CERCLA	Comprehensive, Environmental, Response, Compensation and Liability Act
CFR	Code of Federal Regulations
COR	Contracting Officer Representative
DFW	definable feature of work
DoD	Department of Defense
DOT	Department of Transportation
DQCR	Daily Quality Control Reports
DRO	diesel range organics
EBS	environmental baseline survey
EPA	U.S. Environmental Protection Agency
FOST	Finding of Suitability to Transfer
FMCSR	Federal Motor Carrier Safety Regulation
ft ²	square feet
FWV	Field Work Variance
FSP	Field Sampling Plan
GRO	gasoline range organics
HEPA	high-efficiency particulate air (filter)
in.	inch
MS	matrix spike
MSD	matrix spike duplicate
NCR	noncompliance report
NESHAP	National Emission Standards for Hazardous Air Pollutants
NON	notice of noncompliance
PCB	polychlorinated biphenyl
PPE	personal protective equipment
ppm	parts per million
PRAC	Pre-Placed Remedial Action Contract
QA	quality assurance
QC	quality control
RA	Removal Action
RAWP	Removal Action Work Plan

List of Acronyms (cont.)

SAP	Sampling and Analysis Plan
SHERP	Safety, Health, and Emergency Response Plan
SLAAP	St. Louis Army Ammunition Plant
SVOCs	semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Potential
TSCA	Toxic Substances Control Act
USACE	U.S. Army Corps of Engineers
VOCs	volatile organic compounds

1.0 Introduction

This document constitutes Addendum No. 1 to the Removal Action Work Plan (RAWP) for the mitigation of polychlorinated biphenyl (PCB) contamination at Building 3, one of the former production facilities at the Saint Louis Army Ammunition Plant (SLAAP). SLAAP is located at 4800 Goodfellow Boulevard, St. Louis, Missouri (refer to Figure 1-1 of the RAWP). The RAWP, issued by Arrowhead Contracting, Inc (Arrowhead) on November 8, 2001, addresses the removal of materials containing PCBs at concentrations exceeding 50 parts per million (ppm), the threshold concentration specified in the Toxic Substances Control Act (TSCA) (as amended by the 1998 TSCA Amendments, or Mega Rule). Materials containing PCBs greater than 50 ppm must be disposed at a chemical/hazardous waste landfill approved under TSCA. (For convention, these materials will be referred to herein as "TSCA wastes.")

This Addendum to the RAWP addresses supplemental activities for completing the removal and cleanup of the remaining PCB contamination at Building 3, including PCBs less than 50 ppm, as well as TSCA waste materials not previously addressed by the RAWP (Arrowhead, 2001a). The Addendum was prepared on behalf of the U. S. Army Corps of Engineers (USACE), Kansas City District (CENWK) and the U.S. Army Aviation and Missile Command (AMCOM), Huntsville, Alabama by Arrowhead under Pre-Placed Remedial Action Contract (PRAC) number DACW41-00-D0019, Task Order 0002.

This document constitutes notification on behalf of AMCOM of the intent to complete a "self-implementing remediation" [per 40 Code of Federal Regulations (CFR) Part 761.61] of Building 3 to the extent necessary for lifting the Notice-of-Noncompliance (NON) issued by the U.S. Environmental Protection Agency (USEPA). Remediation of Building 3 shall be performed in accordance with a risk-based approach as permitted by USEPA under 40 CFR 761.61(c) of TSCA. Notification is provided as required under 40 CFR 761.61(a)(3).

1.1 Project Summary

The RAWP presents a description of activities associated with the removal and disposal of materials at Building 3 containing PCBs at concentrations exceeding 50 ppm (i.e. TSCA wastes). In accordance with 40 CFR 761.61(a)(5), PCB-contaminated waste materials, including "bulk remediation wastes" and "porous surfaces" (concrete) greater than 50 ppm, must be disposed at a

chemical/hazardous waste landfill approved under TSCA. The specific TSCA wastes addressed by the RAWP include:

- Concrete flooring on the first and second floors
- Soil flooring in the basement
- Concrete flooring in the basement
- Oil-stained building columns
- Cast iron sewer piping
- Materials located in the former Chip Chute area.

The majority of these TSCA wastes were removed and disposed between November 2001 and January 2002. The approach of removing bulk remediation wastes and porous surfaces containing PCBs greater than 50 ppm was aimed at improving the ability to transfer the property. By removing the TSCA wastes, a future buyer could demolish the building and dispose the building debris, including the remaining PCB-contaminated materials, as special or non-hazardous waste in a municipal landfill. Under current regulations, materials containing PCBs less than 50 ppm may be disposed at a municipal or non-hazardous waste landfill, provided the facility is permitted to accept low-level PCBs [referencing 40 CFR 76161(a)(5)(v)]. The Removal Action (RA) for PCB TSCA wastes was not originally aimed at eliminating the NON, because residual PCB contamination (less than 50 ppm) would be left in the building at levels unacceptable to USEPA. AMCOM planned on addressing the NON at a later date.

In January 2002, additional PCB contamination classified as TSCA waste was discovered within a gravel layer beneath the concrete flooring in the basement of Building 3 (refer to Section 2.4.2). The presence of this contamination resulted in a significant change in the original scope of the RA. To remove the PCB contamination beneath the concrete basement flooring, the building will need to be demolished, because the concrete flooring serves as a spread footer for the primary columns supporting the upper floors and roof of the building. The need to demolish the building presented an opportunity to AMCOM to remove the remaining PCB contamination (less than 50 ppm) in the building and accelerate the schedule for transferring the property. In response to this opportunity, AMCOM elected to demolish Building 3 and complete the cleanup of PCB contamination. Thus, the focus of the RA switched from the removal of TSCA wastes to the removal of PCB contamination to the extent necessary for lifting the NON. USEPA has

indicated in recent discussions that the cleanup standards set forth in TSCA supercede the requirements specified in the NON.

The demolition phase of the project will include the removal of building materials above the basement flooring. As discussed above, the demolition debris will not be classified as TSCA waste, because the building materials containing PCBs above 50 ppm (refer to list above) were previously removed in accordance with the RAWP. During the demolition, building materials containing PCBs less than 50 ppm will be segregated for disposal as special waste in a municipal landfill, including:

- Select portions of concrete flooring on the first and second floors
- Material within the basement catch basin
- Cast iron sewer piping in the basement
- Intermediate concrete columns in the basement (located between Rows 9 and 22)
- Concrete foundation wall adjacent to PCB contamination outside the building (near the former Chip Chute load-out area)
- Concrete walls in the Chip Chute area

All other building materials above the basement floor level (i.e. brick, concrete block walls, steel I-beams) will be disposed as non-hazardous construction waste. The removal and disposal of the building during the demolition phase will effectively complete the mitigation of PCBs associated with the building structure.

However, following demolition, some PCB-contaminated materials will be left in the base of the building excavation (footprint), including:

- Basement soil flooring
- Concrete footers for the primary building columns
- A portion of the basement concrete flooring (between Rows 20 and 22)

These materials will eventually be buried approximately 8 – 10 ft. below ground surface (bgs) after the building excavation is backfilled. Under TSCA, for USEPA to accept the presence of residual PCB contamination in the subsurface, it must be demonstrated that the materials do not pose an unreasonable risk to human health and the environment. Accordingly, a site-specific risk

assessment was performed as outlined in 40 CFR 761.61(c) (*Risk-based disposal approval*). The risk assessment included the calculation of a health-based, site-specific cleanup goal consistent with future anticipated land use and exposure scenarios. Materials found to be contaminated with PCBs above the site cleanup level will be remediated prior to backfilling the excavation. The PCB cleanup goal for the site was calculated to be 7.6 ppm (Aroclor-1248) for a future construction worker exposure scenario, based on the carcinogenic effects of PCBs. Details of the risk-based approach are presented in Section 2.6 and Appendix C.

The concrete footers that will be left in the building footprint are not expected to be a significant concern with respect to PCB contamination. Concrete columns and footers were sampled during the Field Investigation (Arrowhead, 2001b). The majority of footers located outside the limits of the concrete flooring in the basement were found not to be contaminated with PCBs at elevated levels. In contrast, many of the concrete footers and intermediate concrete columns located within the limits of concrete flooring in the basement were found to contain high levels of PCBs. However, several of the columns and footers were decontaminated in accordance with the RAWP. Additionally, 100 footers located between Rows 9 and 20 will be removed along with the concrete flooring during the removal of TSCA wastes (refer to Figure 3-1). All intermediate columns between Rows 9 and 22 will be removed during the demolition effort (refer to Figure 2-4). One concrete footer located east of Row 22 (at Column G25) is known to be contaminated with PCBs above the cleanup goal (18.8 ppm, based on sample CC08 collected during the Field Investigation); this footer will be removed and disposed during the demolition effort (refer to Figure 2-4).. Furthermore, the concrete flooring between Rows 20 and 22 will be left in the building excavation following demolition. This concrete was previously scabbled to remove PCB contamination. Confirmation samples collected following the scabbling operation indicated that residual PCB levels were below the site cleanup level of 7.6 ppm.

Consequently, the primary concern with respect to residual PCB contamination left in the building footprint is soil flooring in the basement. Areas where PCB contamination is present at concentrations above the site cleanup level will need to be remediated prior to backfilling the building excavation. The areas of concern for soil in the basement of the building include the following:

- **Soil beneath basement concrete flooring** – The soil beneath the basement concrete basement flooring between Rows 9 and 20 will be remediated to the site cleanup level as

part of the removal of TSCA wastes (concrete, gravel, and soil) in this area. This area is shown on Figure 3-1.

- **Soil in Chip Chute area** – Approximately 3 ft. of residual PCB-contaminated soil remained in the Chip Chute area following the initial phase of the RA. This area will be remediated to remove the remaining TSCA waste and to achieve the site cleanup level. The majority of the former Chip Chute waste pile was removed during the initial phase of the RA.
- **Soils south and west of concrete flooring** – During the initial phase of the RA (between November 2001 and January 2002), soils classified as TSCA waste were removed from areas immediately south and west of the concrete flooring in the basement (refer to Figure 3-2). Confirmation samples indicated that the majority of TSCA wastes were successfully removed; however, PCBs in some areas are still present above the site cleanup level. These areas will require further remediation.
- **Soils identified during Site-Specific Environmental Baseline Survey (EBS)** – Other potential areas of soil contamination were investigated as part of the Building 3 portion of the Site-Specific EBS. The Site-Specific EBS is being conducted by AMCOM in accordance with Department of Defense (DoD) standards in preparation for the eventual transfer the property to a new owner, referred to as a Finding of Suitability to Transfer (FOST). Sampling and analysis associated with the Building 3 Site-Specific EBS were conducted in March 2002. Samples were collected from random locations for risk assessment purposes and from specific areas where oil staining was observed. The results of the sampling effort indicated that two additional areas of PCB contamination will need to be remediated due to the presence of PCBs above the site cleanup level of 7.6 ppm. (The sample results are provided under separate cover.) These areas include oil-stained soil near Sectors K9 and C8 (refer to Figure 3-2).
- **Soils east of Row 22 identified during Field Investigation** – Oil-stained soils east of Row 22 were characterized during the Field Investigation (Arrowhead, 2001b). Sample results from the Field Investigation indicated that the soil in two areas contained PCBs at concentrations above the site cleanup level (7.6 ppm). One area, associated with sample SS15, is located near Sector E28. The other area is associated with sample SS30, located

between Sectors C22 and D22 (refer to Figure 3-2). These areas were not remediated during the initial phase of the RA, because the soils were not classified as TSCA waste. Remediation of these areas will be required to meet the site cleanup goal.

- **Area identified during Phase I EBS** – During the Phase I EBS of SLAAP conducted by Tetra Tech, PCBs were detected above the site cleanup level in a localized area of oil-stained soil near Sector E38 (refer to Figure 3-2). This particular result was documented in the *Final Environmental Baseline Survey Report for the St. Louis Army Ammunition Plant, St. Louis, Missouri, December 28, 2000* (Tetra Tech, 2000).

To further address USEPA's concern regarding PCB contamination at Building 3, AMCOM also elected to remove the PCB-contaminated materials outside the building near the Chip Chute. These materials were identified during the Field Investigation (Arrowhead, 2001b) and include: asphalt, a layer of waste material beneath the asphalt (similar to metal shaving waste observed in the Chip Chute), gravel beneath the asphalt and waste layer, and soil underlying the gravel (refer to Figure 3-1). Even though cleanup of this area is not required by NON, it will be incorporated into the scope of the RA due to its proximity to the building. This area was not included in the original scope and RAWP.

In summary, this Addendum addresses supplemental remedial activities at Building 3, including:

- Mitigation of TSCA waste (gravel and soil) beneath the concrete flooring in the basement.
 - Mitigation of TSCA waste (asphalt, waste, gravel, and soil) outside Building 3, adjacent to the Chip Chute and former loading dock.
 - Mitigation of the remaining PCB contamination (less than 50 ppm) at Building 3 to the extent required under TSCA (and necessary for lifting the NON).
- PCB contamination in building materials above the basement floor will be mitigated through demolition and disposal of the building.
 - PCB contamination in materials (primarily soil) left in the building footprint will be remediated to a risk-based cleanup level per 40 CFR 761.61(c).

To prepare the building for demolition, various asbestos-containing materials (ACM) will be removed. These materials include piping insulation in the basement, select floor tiles on the first floor, and transite siding on the east end of the building, first floor ceiling, catwalks, and roof.

Ancillary activities during the RA will include site administrative support, staging and load-out of materials, material transportation and disposal, contractor quality control (QC), and site health and safety. Soil confirmation sampling will be performed within each area of soil remediation to verify that the site cleanup level was achieved.

A key activity during the RA will be the proper segregation and disposal of the various waste materials generated during demolition and remediation. Classifications of the various waste materials include:

- TSCA wastes (PCBs > 50 ppm)
- PCB special wastes (PCBs < 50 ppm)
- ACM
- Non-hazardous demolition/construction waste

Each of the above waste types will require different methods and facilities for disposal. A summary of the classification and final disposition of the various waste materials that will be generated during the RA at Building 3 is presented in Table 1-1.

1.2 Project Roles and Responsibilities

Table 1-2 of this Addendum identifies organizations, roles, and responsibilities for key personnel associated with the PCB Removal Action at Building 3. Qualified subcontractors will be utilized to perform the following services in support of the RA, including:

- Building demolition
- Asbestos air sampling
- Transportation and disposal of PCB-contaminated materials
- Chemical analysis of confirmation and other samples

A USACE-approved laboratory will be subcontracted to perform off-site chemical analysis of confirmation samples (refer to Section 3.8) and backfill material (refer to Section 3.9.1). The

USACE laboratory located in Omaha, Nebraska will analyze quality Assurance (QA) split samples.

1.3 Work Plan Organization

The organization of this Addendum is similar to the RAWP. Readers are referred to Section 1.3 of the RAWP for description of each section. This Addendum only presents information relative to the supplemental project activities discussed in Section 1.1 and which were not included in the RAWP.

Primary supporting documents include a Sampling and Analysis Plan (SAP), a Safety, Health, and Emergency Response Plan (SHERP), project specifications, and project forms. These documents are included as appendices in the RAWP. This Addendum also contains supporting documents specific to the supplemental project activities described herein. Appendix A contains Addendum No. 1 to the SHERP. Appendix B contains supplemental guide specifications for demolition and backfilling. Appendix C presents information and calculations associated with the determination of a site-specific PCB cleanup goal.

2.0 Background Information

This section presents relevant background information to the planning and implementation of the RA as outlined in this Addendum.

2.1 Site History and Previous Investigations

Details regarding site history and previous investigation are included in Sections 2.2 and 2.4 of the RAWP (Arrowhead, 2001a), respectively.

2.2 Physical Features of Building 3

The physical characteristics of Building 3 are summarized in the table below. Note that this table supercedes the table presented in Section 2.3 of the RAWP.

Building Characteristics	
Area	<ul style="list-style-type: none">• Basement - 37,000 ft² of concrete floor, 131,000 ft² soil floor• First Floor – 168,000 ft²• Second Floor – 155,000 ft²• Penthouses – 5 @ 1,600 ft²
Height	Foundation to roof: 30 ft
Style	Two stories, basement, and five penthouses; three catwalks to adjacent buildings
Construction Materials	Steel frame and roof beams on reinforced concrete piers and spread footings; masonry walls; and a prefabricated concrete roof. Eastside addition has the same structure, but also is covered with transite siding.
Construction Date	Built in 1941, retooled (including eastside addition) in 1944. Renovated to create office space in 1984 and 1985.

2.3 Removal Action Objectives

The objective of the Removal Action is the final remediation of Building 3 resulting in the lifting of the NON. To meet this objective, the remediation must comply with TSCA standards under 40 CFR 761.61(a) for the “self-implementing on-site clean-up” of PCB wastes and porous surfaces.

Materials containing PCBs at concentrations exceeding 50 ppm (i.e. TSCA wastes) will be removed separately from other materials due the special disposal requirements under TSCA. As discussed in the RAWP, a modified action level for TSCA waste was calculated to be 43.5 ppm based on the analysis of matrix spike and matrix spike duplicates (MS/MSD) samples. The use of a modified action level increases the confidence that PCB concentrations greater than 50 ppm are removed from the building. The RAWP addresses the removal of TSCA waste associated with concrete flooring on the first and second floors, Chip Chute, portions of concrete flooring in the basement, soil flooring in the basement, and concrete building columns/footer. This Addendum addresses the removal of the following TSCA waste materials (refer to Figure 3-1):

- Portions of the basement concrete flooring between Rows 9 and 20
- Gravel and soil beneath the basement concrete flooring between Rows 9 and 20
- Asphalt, waste, gravel and soil from the area outside the building near the former Chip Chute load-out area

This Addendum also incorporates the TSCA wastes that were not removed as planned during the initial phase of the RA, including:

- Select portions of basement concrete flooring between Rows 9 and 20
- Select portions of soil flooring that were previously excavated, but are associated with PCB confirmation sample results greater than 43.5 ppm (refer to Figure 3-2)
- Soil located beneath the former Chip Chute waste pile.

To satisfy USEPA requirements, materials at Building 3 containing PCBs less than 50 ppm will also need to be cleaned up or removed. Contaminated building materials located above the basement floor level, such as concrete flooring and columns, will be removed and disposed as a result of the demolition of Building 3. Following the demolition, however, PCB-contaminated materials will be left in the ground surface within the building footprint, including concrete column footers, portions of concrete basement flooring, and basement soil flooring. These materials will permanently remain in the subsurface at a depth of approximately 8 – 10 ft. bgs. The acceptable residual PCB level for materials left in the subsurface is 7.6 ppm, as determined in accordance with 40 CFR 761.61(c) of TSCA (refer to Section 2.6). The following areas will be remediated to meet the site cleanup level for materials remaining in the subsurface:

- Soils in areas where TSCA waste materials have been or will be removed, including: soil excavations from the initial phase of the RA; soils outside the building near the Chip Chute; and soils beneath the basement concrete flooring between Rows 9 and 20 (refer to Figures 3-1 and 3-2).
- Additional areas of soil containing PCB contamination greater than the site cleanup level (refer to Figure 3-2), as identified during the Field Investigation , Building 3 Site-Specific EBS for Building 3, and Phase I EBS.
- One concrete footer at Column G 25 contaminated with PCBs above the site cleanup level (based on the results of the Field Investigation).

The following table summarizes the primary objectives of the overall (initial and final phases) Removal Action.

RA Objective	Areas and Materials	Cleanup Criteria
Remove materials classified TSCA waste (with concentrations exceeding modified action level of 43.5 ppm).	Concrete flooring on first and second floors, concrete flooring in basement, waste material from Chip Chute area, cast iron sewer piping in basement, soil flooring in basement and Chip Chute, soil and other materials outside the building adjacent to the former Chip Chute load-out area, gravel and soil beneath basement concrete flooring. Select concrete columns in the basement will be decontaminated rather than removed. [Note: This Addendum addresses materials outside the building and the contamination beneath the basement concrete flooring.]	Dispose materials in a chemical/hazardous waste landfill permitted to accept PCBs above 50 ppm (TSCA wastes).
Remove building materials contaminated with PCBs (less than 50 ppm).	Concrete flooring (first and second floors), cast iron sewer piping, concrete intermediate support columns, concrete walls in the Chip Chute area, concrete foundation wall adjacent to PCB soil contamination outside the building, materials inside the basement catch basin	Dispose materials in a municipal or demolition landfill permitted to accept low-level PCBs (.e. PCB special wastes).

RA Objective	Areas and Materials	Cleanup Criteria
Remediate PCB-contaminated materials that will remain in building excavation (footprint).	Basement soil flooring and concrete footers.	Remediate (excavate) materials to 7.6 ppm, the health-based PCB cleanup level established through a risk assessment in accordance with 40 CFR 761.61(c).

2.4 Nature and Extent of PCB TSCA Waste

The initial areas of PCB contamination (classified as TSCA waste) in Building 3 were identified during a field investigation conducted in June and July of 2001. The results of the investigation are described in the Field Investigation Report (Arrowhead, 2001b). Descriptions of the nature and extent of PCB contamination above the modified action level in concrete flooring, basement soils, the Chip Chute area, and building columns are presented in Sections 2.6.1 through 2.6.6 of the RAWP. This section describes the nature and extent of TSCA wastes not addressed in the RAWP, including PCB-contaminated soil outside the building and the PCB contamination discovered beneath the basement concrete flooring.

2.4.1 Contamination Outside Building Near Chip Chute

PCB contamination in the soil outside Building 3 near the Chip Chute loading dock was evaluated through the collection soil and waste samples. Aside from a thin strip of soil immediately adjacent to the building, the majority of the area is covered by approximately 4 inches of asphalt. Railroad tracks also traverse this area. Beneath the asphalt, a hard, thin layer of waste material (similar to the chip chute waste pile material) was observed during the field investigation, followed by 2 – 3 feet of gravel. Native soil is encountered beneath the gravel at an average depth of 3 ft. bgs. During the field investigation, heavy staining with a strong petroleum odor was observed in the upper portions of the native soil at several of the sample locations. The PCB analytical results of soil samples collected from this area are presented in Figure 2-1. The PCB contamination covers a total area of approximately 2,500 ft².

Most of the PCBs exceeding the action level were detected in samples collected from 0 – 6 in., which were comprised of waste material (similar to the Chip Chute waste pile) found beneath the

pavement. However, significant levels of PCBs were detected in three samples collected to a maximum depth of 42 in. bgs. These samples were collected from the native soil encountered approximately 2 – 3 ft. bgs. The presence of PCB contamination from the deep sampling interval suggests that PCB contamination exists deeper than 42 in. bgs in some areas. For estimation of TSCA waste quantities, it is assumed that PCB contamination penetrates to a total depth of 5 feet bgs. An estimate of the quantity of TSCA waste associated with this area is presented in Table 2-1 of this Addendum.

2.4.2 Contamination Beneath Basement Concrete Flooring

In January 2002, during the excavation of waste materials in the Chip Chute, a 2 - 3-inch layer of heavily oil-stained gravel underlying the basement concrete floor was discovered after approximately 10 feet of the flooring profile was exposed along the southern edge of the Chip Chute (refer to Figure 2-2). The oily material was observed pooling in places and discharging out from the gravel layer into the Chip Chute. In addition, the oily material had a very strong odor that resembled other areas where PCB contamination had been found. A sample of the gravel base material was collected and submitted the sample for PCB analysis. The reported result was 7,700 ppm PCBs. Two samples of the soil underlying the gravel were also collected and submitted for analysis. The reported results were 45 ppm and 2.5 ppm for the samples 6 in. and 12 in. below the gravel base, respectively, indicating that vertical migration of the PCB's was restricted to the upper foot of clay soil beneath the gravel.

To evaluate the extent of the PCB contamination in the gravel layer beneath the 40,000 ft² area of basement concrete flooring, 9 holes were cored through the concrete floor in various locations (refer to Figure 2-2). In addition, test pits were excavated in the soil along the southern edge of the basement concrete floor. The results of this investigation confirmed the presence of heavy oil staining and PCB contamination above 50 ppm in the gravel layer below the concrete flooring between rows 9 and 20 (approximately 30,000 ft²). No evidence of the gravel layer, nor PCB contamination, was found beneath the basement concrete flooring located between Rows 20 and 22. An estimate of the quantity of TSCA waste associated with this area is presented in Table 2-1b of this Addendum.

2.5 Other Materials Requiring Special Handling and Disposal

Other materials in the building that require special consideration with regards to handling and waste disposal during the project include asbestos-containing materials (ACM), lead-based

materials, materials classified as PCB special wastes, fluorescent lighting, and miscellaneous fluids and sediments.

2.5.1 Asbestos Containing Materials (ACM)

An inspection was performed in January 2002 to identify ACM in the building that would need to be addressed as part of the demolition. The inspection included the collection of composite samples of materials suspected of containing asbestos. Based on the results of the samples collected during the inspection, the following ACMs were identified:

- Piping insulation in the basement
- Floor tile in various offices on the first floor, excluding the mastic
- Transite siding on the east end of the building, catwalks, and roof
- Window putty throughout the building

In accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61 (Asbestos), regulated asbestos containing materials (RACM) will be removed from the building prior to demolition. These materials include the piping insulation, floor tile, and transite. The following table summarizes the RACM identified for removal prior to demolition, including estimated quantities.

Material	NESHAP Classification	Estimated Quantity Scheduled for Removal
Piping Insulation	Friable	17,000 LF
Floor Tile*	Category I Non-Friable	5,000 ft ²
Transite Siding	Category II Non-Friable	13,000 ft ²

Window putty material was determined to be ACM but will not be removed from the building prior to demolition. Rather, windows containing ACM putty will be extracted during demolition and shipped to a certified scrap recycler. The following materials were found to be non-ACM based on the results of bulk sampling and analysis: floor tile mastic, select floor tiles, sheet rock and joint compound, roofing materials.

2.5.2 Lead-Based Materials

A composite sample of paint from interior walls and ceilings was collected in January 2002. The lead content was determined to be 0.004%, which is below the action level (0.5%) currently specified by Housing and Urban Development (HUD).

2.5.3 PCB Special Wastes

The materials listed below potentially contain PCBs at concentrations less than 50 ppm. Although these materials are not classified as TSCA wastes, State law requires that they be handled and disposed as "special wastes". As a result, the receiving disposal facility must be permitted by the State to accept low-level PCBs, and the wastes must be profiled and manifested for disposal.

Due to the special requirements, it will be necessary to segregate PCB special wastes during demolition and remediation activities. An estimate of PCB special waste quantities is presented in Table 2-2. The following presents relevant information for each special waste stream.

- **Cast iron sewer piping in basement:** Approximately 3,000 linear feet (LF) of cast iron sewer piping classified as special waste will be removed and disposed prior to commencing demolition activities. Sediments within the piping were sampled during the first phase of the RA. The majority of the lines were found to be contaminated with PCBs. The sewer piping classified as TSCA waste was removed during the first phase of the RA in accordance with the RAWP.
- **Concrete flooring on first and second floors:** Concrete flooring designated as PCB special waste will be segregated and disposed during demolition. The identification of concrete building materials classified as special waste (refer to Figure 2-3) was based on the PCB results of previous investigations, including the Field Investigation conducted by Arrowhead in 2001. It is estimated that 13,000 tons of special waste concrete flooring will be generated during demolition.
- **Concrete intermediate columns in basement:** The majority of concrete columns in the basement (between Rows 9 and 22; refer to Figure 2-4) are oil-stained and contain residual PCB contamination. During demolition, 372 intermediate columns will be

removed and disposed as special waste. The estimated quantity of concrete debris generated as a result of the demolition of these columns is 620 tons.

- **Concrete walls in the Chip Chute area:** Based on the results of the Field Investigation, the concrete walls on the east and west sides of the Chip Chute area (refer to Figure 2-4) are not classified as TSCA waste. However, due to residual PCB contamination, they are considered special waste. These walls will be removed and disposed following demolition of the building. Approximately 30 tons of special waste concrete debris will be generated from the removal of these walls.
- **Concrete foundation wall adjacent to PCB contamination outside the building:** Approximately 100 linear feet of the concrete foundation wall along the north side of Building 3 (Figure 2-4) will be removed following demolition and remediation of TSCA wastes outside the building. This portion of the foundation wall is in direct contact with TSCA waste materials outside the building (in the vicinity of the former Chip Chute load-out area) and within the Chip Chute area. It is estimated that approximately 75 tons of special waste concrete debris will be generated from the demolition of this wall.
- **Material inside basement catch basin:** Waste materials found inside the basement catch basin (Figure 2-4) were sampled and tested during the Field Investigation. The materials were determined to contain PCBs, but were not classified as TSCA wastes. During the demolition effort, the materials inside the catch basin will be removed and disposed as PCB special waste. The estimated special waste quantity is 15 tons.
- **Concrete footer at Column G25:** The concrete footer at Column G25 (refer to Figure 2-4) was found to contain PCBs greater than the site cleanup level during the Field Investigation. This footer will be removed and disposed as PCB special waste. Approximately 5 tons of special waste concrete will be generated.
- **Soil flooring in basement:** Areas of soil flooring classified as special waste are listed in Section 3.6 and are shown on Figure 3-2. The estimated quantity of special waste soil is 345 tons. Additional special waste soil may be generated in other areas as described in Section 3.6.

2.5.4 Fluorescent Light Bulbs and Ballasts

All fluorescent light bulbs (FLBs) in the building will need to be removed prior to demolition due to the presence of mercury vapors and lead components inside the bulb. The bulbs will be collected and shipped off-site to a certified recycling facility, as required under RCRA.

Additionally, PCB-containing fluorescent light ballasts (if encountered) will need to be removed and shipped off-site for disposal. Select ballasts were checked for PCBs during the first phase of the RA. The labels on these ballasts stated "No PCBs."

2.5.5 Miscellaneous Fluids and Sediments

Residual fluids and/or sediments may be present in various tanks, sumps, piping, and other structures within the building. For example, standing water was observed in at least two concrete basins beneath transformer/switchgear rooms. Miscellaneous fluids and sediments will need to be characterized to determine the proper method of handling and/or disposal during the demolition phase of the RA. These materials will be sampled and analyzed as discussed in Section 3.2. Materials classified as hazardous waste or special waste will be removed and disposed accordingly. Otherwise, no action will be taken, and the materials will be considered non-hazardous demolition waste.

2.6 Risk-Based Cleanup Levels

The demolition of Building 3 will involve the removal of building materials situated above the basement floor level. The footers for 357 building support columns (located in the soil floor areas of the basement) and the concrete flooring between Rows 20 and 22 will not be demolished and will be allowed to remain within the building excavation. In addition, residual PCB contamination in soils within the building excavation will be left in place after demolition. All of these materials will eventually be covered with clean soil backfill from an off-site source. The acceptance of residual PCBs below the ground surface is supported by a risk assessment in accordance with 40 CFR 761.61(c). Based on this approach, an acceptable, health-based PCB level for materials remaining in the subsurface is 7.6 ppm. The cleanup level was developed for a construction worker potentially exposed to the buried materials during future excavation work at the site, and was based on a target cancer risk of 1×10^{-6} . Refer to Appendix C for additional details regarding the assumptions, approach, and calculations.

3.0 Removal Action Field Activities

This section presents the details of field activities and protocols associated with the remediation of PCBs at Building 3. The primary field activities include:

- Site preparation, including set-up of support facilities, restricted areas and security
- Waste characterization sampling and, as necessary, disposal of miscellaneous wastes
- Asbestos and sewer piping removal
- Demolition and disposal of the building
- Removal of TSCA waste associated with the basement concrete flooring and materials outside the building near the Chip Chute
- Additional remediation/removal of PCB-contaminated soil and concrete as necessary
- Water management during excavation activities in PBC-contaminated areas
- Soil confirmation sampling to verify completion of PCB cleanup activities
- Site restoration, including backfilling
- Material load-out, transportation, and disposal

This section also presents a discussion of the procedures for field documentation.

3.1 Site Preparation

This section includes the details associated with site preparation, including setup of site administration facilities, identification of restricted areas, setup of decontamination areas, coordination of site security, and designation of site haul routes.

3.1.1 Site Administration Facilities

Administration (support) facilities at the site will consist of an office job trailer, lavatory facilities, and hand-wash station, and a job trailer for storage of equipment and supplies. It is also anticipated the demolition subcontractor will setup a job trailer at the site. The proposed locations for these facilities are shown on Figure 3-1. Setup of the facilities will occur at the onset of the fieldwork. Administration office and supply storage locations for the asbestos removal activities will be at the same locations inside Building 3 as shown in the RAWP.

3.1.2 Restricted Areas and Exclusion Zones

Areas associated with the removal of PCB contamination will be considered exclusion zones. These areas will be segregated from demolition and other site activities to prevent unauthorized entry and to prevent the spread of contamination to clean areas. Temporary construction fencing, warning tape, or other similar barricades will be installed around the exclusion zones (i.e. excavations) for the duration of PCB removal activities.

Demolition areas will be considered restricted areas. Temporary construction fencing, warning tape, or other similar barricades will be installed to prevent access to restricted areas as necessary. Barricades will also be established around the perimeter of excavations. Access to the SLAAP property will be controlled via the perimeter chain-link fencing and front gate. The front gate will be monitored during construction activities to ensure that personnel and equipment entering the property area are authorized. Site security measures are discussed in Section 3.1.4.

3.1.3 Decontamination Areas

A specific entry/exit (control) point will be established at the perimeter of each exclusion zone to control the access of personnel and equipment. The control point will also serve as a station for personnel decontamination - donning personal protective equipment (PPE), including boot covers, upon entry, and doffing and disposing PPE upon exiting the contaminated area. Personnel decontamination procedures are described in the SHERP (Arrowhead, 2001a).

Heavy equipment will not contact high levels of PCB contamination to a significant extent, because the equipment will generally be positioned at the edge of a contaminated area. Even though equipment may need to enter an excavation as the excavation increases in size, the highest levels of PCB contamination will have previously been removed. Since significant levels of contamination are not anticipated for the tires/tracks and bodies of heavy equipment, decontamination will be conducted within the building footprint. However, the buckets of excavators and loaders will come into contact with materials containing high levels of PCBs during the removal of TSCA wastes. Accordingly, the buckets and arms of equipment will be decontaminated outside the building footprint in a designated area. Rinse and wash water from the decontamination of buckets and arms of equipment will be collected, containerized, and sampled as described in Section 3.2.

3.1.4 Site Security

Arrowhead will subcontract site security services for the duration of the fieldwork. A security guard will be stationed on site during off-work hours (from approximately 6:00 pm to 7:00 am during work days and 24 hours per day during non-work days). The proposed project work schedule is discussed in Section 7.0. The security service will perform hourly site patrols and will document any visitors to the site. The security subcontractor will be instructed to contact St. Louis Police or Fire Departments and Arrowhead personnel in the event that a break-in or other emergency occurs on-site during non-working hours. Security personnel will have the means to contact Arrowhead personnel without leaving the site. Arrowhead will provide the security service with a list of personnel authorized to enter the site after normal working hours and during breaks periods.

3.1.5 Haul Routes

Trucks carrying contaminated materials and demolition debris from the site will enter at the main gate located at the southeast corner of the site (near the guard shack). After load-out, trucks will proceed eastward along the north or south sides of Building 3 and exit through the main entrance. Trucks will maintain a one-way travel route while on-site. After exiting the site, trucks will follow Stratford Avenue west to Goodfellow Boulevard, and then north along Goodfellow Boulevard to Interstate 70. Additional information regarding material handling, including on-site load-out and transportation and disposal is presented in Section 3.10

3.2 Miscellaneous Waste Characterization and Disposal

As discussed in Section 2.5.5, various tanks, piping, sumps, and other structures in the building may contain solid and liquid residues that potentially require special handling or disposal during the RA. For example, standing water was observed in concrete basins situated beneath two of the former transformer/switchgear rooms. For purposes of this work plan, water that accumulates within excavations for the removal of TSCA wastes (refer to Section 3.7) will be considered a miscellaneous fluid. As suspect materials are encountered during the course of this RA, they will be characterized (sampled and analyzed) to determine the proper methods for handling and disposal. Representative samples will be collected using methods depending on the media: bailer or direct fill for fluid, bottle sampler, scoop, or trowel for sediments. Samples will be collected for analytical parameters appropriate for the media and source (if known). At minimum, samples will be analyzed for the following parameters:

- PCBs - solids and liquids
- Toxicity Characteristic Leaching Procedures (TCLP) Metals - solids
- TCLP semi-volatile organic compounds (SVOCs) - solids
- Total Metals - liquids
- SVOCs – liquids
- Volatile organic compounds (VOCs) – liquids and solids
- pH - liquids for sewer discharge
- Oil and grease - liquids for sewer discharge

Samples will be analyzed for OA1/OA2 if petroleum contamination is suspected. If miscellaneous fluids appear acceptable for discharge to the sanitary sewer system, samples will also be collected and analyzed/tested for pH, oil and grease, and other parameters as required by the St. Louis Metropolitan Sewer District.

Specific protocols for sampling and analytical activities are discussed in the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP), respectively. These documents are included in the SAP that was originally prepared for the Field Investigation (Arrowhead, 2001c).

Additional sampling and analytical protocols are presented in the FSP and QAPP contained in Appendix A of the RAWP (Arrowhead, 2001a).

3.3 ACM and Piping Removal

This section presents the details associated with the removal of ACM and cast-iron sewer piping prior to commencing demolition activities.

3.3.1 ACM Removal

Prior to the demolition effort, asbestos-containing piping insulation, transite siding, and floor tiles will be removed (abated) from the building in accordance with procedures discussed below.

Piping Insulation

The piping insulation will be removed by gross removal methods in accordance with the work practices specified in paragraph (c) of the asbestos NESHAP ("Procedures for asbestos emission control"). Prior to removal of the ACM, the basement area will be prepared for abatement activities as follows:

- All critical openings (windows, doorways, and ceiling openings) will be covered with two layers of 6-mil poly sheeting.
- Two layers of 6-mil poly sheeting will be placed on the basement floor beneath piping to be removed, such that there is at least 20 feet of sheeting on each side of the piping.
- Local exhaust ventilation will be provided using negative air machines equipped with high efficiency particulate air filters (HEPAs).
- To maximize the negative air flow during abatement activities, walls may be erected (using 6-mil poly sheeting) to subdivide the basement into smaller areas.
- A waste load-out room will be constructed near the Chip Chute opening along the north wall. The load-out room will be separated (sealed off) from the basement and exterior of the building with double-flapped doorways.
- A decontamination area will be constructed at the entrance/exit to the basement at the north stairwell; a second station will be established at the south stairwell to the basement, near the garage. The decontamination area will consist of an equipment room, shower, and clean room. Double-flapped doorways will be located at the entrance/exit to each room. Also, the equipment room will be separated from the basement area with double-flapped doorways.

The following procedure will be followed during removal of the insulation:

- The insulation will be wetted with amended water prior to being disturbed.
- Insulation will be removed with box cutters and other tools as appropriate to strip/remove the material from the pipe. During stripping, the material will be "adequately wetted" using amended water.
- The wetted insulation will immediately be placed into a 6-mil poly disposal bag. To the maximum extent possible, the insulation will not be permitted to contact the floor.
- The bare pipe will be brushed with a wire brush, and then heavily coated with encapsulant solution.
- The ACM will be double-bagged (6-mil per bag), sealed, labeled, and transferred to the load-out room near the Chip Chute.
- The disposal bags will then be loaded into roll-off containers that are double-lined with 6-mil poly sheeting.

Alternatively, piping in some areas may be removed using glove bags. These areas will be separated from gross removal areas by walls constructed of 6-mil poly sheeting. Negative will be provided at the point-of-removal using negative air machines equipped with HEPA filters. Dry decontamination methods will be used. The following procedure will be followed during removal of the insulation:

- A glove bag will be assembled at the location of the pipe run where ACM is to be removed.
- A negative pressure will be created inside the glove bag using a low-flow HEPA vacuum.
- The insulation will be removed with box cutters and other tools as appropriate. The insulation will be adequately wetted with amended water during removal.
- Following removal of the insulation, the exposed pipe will be brushed with a wire brush, and then heavily coated with encapsulant solution.
- The glove bag will then be removed in a manner that prevents breaching the containment.
- The glove bag, including the ACM waste, will be sealed then placed into a 6-mil asbestos disposal bag.
- The disposal bag will be sealed, labeled, and transferred to roll-off container that is double-lined with 6-mil poly sheeting.

Floor Tiles

Floor tile classified as ACM will be removed from office areas on the first floor. The areas designated for removal will be prepared as follows:

- All critical openings (windows and doorways) will be covered with two layers of 6-mil poly sheeting.
- In areas where building walls are not present, temporary walls will be erected using 6-mil poly sheeting
- Local exhaust ventilation will be provided using negative air machines equipped with high HEPA filters.

The floor tile will be removed in accordance with the following general procedure:

- HEPA vacuums will be used to clean the floors prior to removal of the tiling.

- Tiles will be wetted using amended water during removal. Individual tiles will be peeled from the floor by hand using tile scrapers. Alternatively, a tile scraping machine may be used as long as the tiles remain primarily intact during removal. It is not anticipated that mechanical chipping will be necessary. If mechanical chipping is necessary, it will be performed within a negative pressure enclosure. Floor tiles will not be sanded.
- The tiles will be double-bagged (6-mil per bag), sealed, labeled, and transferred to a roll-off container that is double-lined with 6-mil poly sheeting.

Following bulk tile removal, loose debris remaining on the floor will be cleaned up using a HEPA vacuum.

Transite Siding Panels

Transite siding will be removed from the east end of the building, from catwalks, and from the roof. The following general procedure will be followed:

- Each transite panel will be sprayed with amended water during removal.
- Transite panels will be removed intact. Panels will not be cut, abraded, or broken.
- Individual panels will be placed directly into a roll-off container that is double-lined with 6-mil poly sheeting.
- Prior to shipping the roll-off container off-site, the panels will be "burrito-wrapped" and sealed.

General Requirements

Personal and area air sampling will be conducted prior to commencing asbestos work, during asbestos removal activities, and following the completion of the asbestos work. Air sampling will be conducted by a subcontracted, Missouri-certified air sampling professional. Samples will be analyzed on-site using phase contrast microscopy in accordance with National Institute of Occupational Safety and Health (NIOSH) Method 7400.

Piping insulation and floor tiles will be double-bagged (6-mil), sealed, and labeled. The disposal bags will then be placed into a roll-off disposal container that is double-lined with 6-mil poly sheeting. Transite siding will be placed directly into double-lined roll-offs, and will be burrito-

wrapped prior to transporting the container off-site. Waste materials will be transported a local landfill is permitted by the state to accept ACM.

3.3.2 Sewer Piping Removal

Based on the results of confirmation sampling conducted during the initial phase of the RA, the majority of cast iron sewer lines in the basement were found to contain sediments contaminated with PCBs. The sewer lines containing PCBs above 50 ppm have already been removed and disposed. As discussed in Section 2.5.3, the remaining cast-iron sewer piping in Building 3 (approximately 3,000 linear feet) will be handled as special waste and will be removed prior to the demolition of the building. Overhead piping will be removed in accordance with the following general procedure:

- While suspended from the ceiling, the piping will be cut into manageable sections, 5 – 15 feet in length, with a chop saw or band saw.
- The ends of the pipe (i.e. at each cut point) will be sealed off with plastic sheeting and duct tape to prevent the release of sediment from the interior of the pipe.
- The pipe hangers will be cut with a chop saw, band saw, or cutting torch.
- The sections of pipe will be transferred to the Chip Chute area in the basement for load-out using a telescopic forklift situated outside the building. Alternatively, piping may be transferred through the basement windows. Piping will then be loaded into a roll-off box for off-site disposal. (Note: The staging/load-out area at the Chip Chute is discussed in detail in the RAWP.)

Portions of sewer lines are located below the basement soil floor (generally less than 6 in. below the floor surface). These sewer lines will be removed up to the point where the pipe exits the building foundation, and the end of the pipe will be capped at that point. The soil above the lines will be excavated using a walk-behind excavator or shovel. The pipe will then be cut into sections and the ends will be sealed as described above. Confirmation samples will be collected from the soil beneath each underground sewer line in accordance with Section 3.8.

3.4 Building Demolition and Removal

The demolition of Building 3 will consist of the removal of all building materials to basement floor level. The "basement floor level" will be defined as the surface of the soil flooring or the top of the concrete footers for building columns and foundation walls. Figure 3-3 presents a conceptual plan for site demolition work. The following table presents the estimated quantities of building materials that will be removed during demolition.

Building Take-Offs (Estimated)	
Masonry	<ul style="list-style-type: none">• Brick walls (exterior) – 70,000 ft² @ 12 in.• Brick walls (interior) – 50,000 ft² @ 8 in.• Block walls (interior) – 15,500 ft² @ 8 in.• Total Est. Weight – 7,600 tons
Roofing	<ul style="list-style-type: none">• 155,000 ft² asphalt matting and gravel over concrete deck
Concrete	<ul style="list-style-type: none">• Flooring (first floor) – 157,200 ft² @ 9 in. (avg.)• Flooring (second floor) – 157,000 ft² @ 9 in. (avg.)• Intermediate columns – 292 ea (1.5 ft. x 1.5 ft. x 9 ft.)• Intermediate columns – 80 ea (1.5 ft x 1.5 ft x 11.5 ft.)• Primary building columns – 457 ea (3 ft. x 3 ft. x 4.5 ft.)• Roofing – 160,000 ft² @ 6 in.• Foundation wall – 20,800 ft² @ 12 in.• Interior walls (basement) – 3,600 ft² @ 12 in.• Loading docks – 4,000 ft² @ 10 in.• Total Est. Weight – 26,750 tons
Piping	<ul style="list-style-type: none">• >40,000 LF steel piping and conduit• >3,000 LF cast-iron piping
Steel (I-beams)	<ul style="list-style-type: none">• 113,200 LF ranging from 8 in. to 30 in.; primary building columns 12 in. x 12 in. x 5/8 in.• Total Est. Weight – 3,700 tons
Metal Stud Walls	<ul style="list-style-type: none">• Sheet rock, aluminum studs – 30,000 ft²

Demolition will be conducted in general accordance the Specification 02220, included as Appendix B of this Addendum. ACM (excluding window putty material) and cast iron sewer piping will be removed by Arrowhead prior to demolition (refer to Section 3.3). A demolition/wrecking firm will be subcontracted to perform all other demolition activities. Activities that will be performed by the demolition subcontractor prior to starting demolition work include:

- Obtaining required permits/notifications for demolition activities
- Disconnecting and locking/tagging out all utilities serving Building 3.
- Recovering and disposing freon that may be present within Building 3 air conditioning systems.
- Removing FLBs and shipping them off-site to a certified recycler; and, removing PCB-containing ballasts (if encountered).

Demolition will be accomplished using a combination of heavy equipment, including, but not limited to:

- Cranes with wrecking balls
- Track-hoes/excavators with various attachments (i.e. shears, crushers, breakers, grapples)
- Front-end track loaders
- Small loaders (i.e. Bobcats)
- Haul trucks and trailers

Demolition of the building will proceed from west to east in order to expose the basement concrete flooring (between Rows 9 and 20) at the earliest possible time. During demolition, all building debris will be hauled off-site for disposal or recycling. Receiving facilities shall be certified, permitted, and/or licensed by Federal, State, or local agencies. Trucks hauling demolition debris will use on-site haul routes as discussed in Section 3.1.5. Demolition of Building 3 will also include.

- Removal of three catwalks connecting Building 3 with adjacent buildings.
- Construction of block walls at the entrance to Building 3 from underground tunnels.
- Termination and capping of utility lines (except cast iron sewer piping) and drains at the point where the lines penetrate the building foundation or basement ground surface.

Rather than demolish the windows containing ACM putty, the demolition subcontractor will extract the windows as whole units during demolition. A plastic drop cloth will be placed below the point of extraction to capture any falling debris. The windows will also be wetted during the extraction process. Following extraction, the windows will be placed on a plastic drop cloth until

they are loaded onto a trailer for shipment off-site. The windows will then be transported by the subcontractor, in tact, to a certified scrap recycler.

Portions of concrete flooring on the first and second floors and 372 concrete support columns in the basement are classified as special waste (i.e. potentially containing PCBs at concentrations less than 50 ppm) (refer to Section 2.5.3). These materials shall be segregated and disposed as special waste at a facility permitted by the State to accept low-level PCBs. The estimated quantity of special waste (concrete flooring and columns) is 14,000 tons. The demolition subcontractor will segregate special waste materials from non-hazardous demolition materials. To facilitate segregation, materials designated as special waste will be painted prior to commencing demolition. Additionally, the subcontractor may sequence the demolition work to remove non-hazardous and special wastes portions at different times to prevent co-mingling of the different materials. The receiving landfill may require the collection and analysis of samples to confirm the level of PCBs in the concrete. Confirmation samples, if required, will be collected at the frequency specified by the landfill. It is anticipated that the frequency will not exceed 1 sample per 1,000 CY of special waste material.

Demolition will include the removal of the concrete foundation walls. The removal of the foundation will create an open excavation with soil sidewalls. The depth of the excavation will be approximately 8 – 10 ft. bgs. Personnel and equipment will need to occupy the building excavation to remove TSCA waste materials beneath the basement concrete flooring (refer to Section 3.5.1) and to remediate other areas of soil flooring (refer to Section 3.6). For the safety of personnel working in the excavation, select portions of the excavation sidewalls may be sloped in accordance with Occupational Safety and Health Administration (OSHA) standards (29 CFR 1926 Subpart P). Slopes will be constructed using soil from the floor of the excavation or by placing soil (backfill) from an off-site borrow source. The open portions of the excavation that will not be sloped will be protected with construction fencing in accordance with OSHA standards.

A portion of the foundation wall approximately 100 ft. in length along the north side of the building, as well as the walls on the east and west sides of the Chip Chute area (total length of 40 ft.), will not initially be demolished. These walls are located adjacent to the PCB-contaminated materials outside the Chip Chute area (refer to Figures 2-4 3-1). They will remain in place until the PCB-contaminated materials are removed. Following removal of the PCB

contamination, the walls will be demolished using of an excavator with a breaker attachment (or other equivalent methods). The pulverized concrete from the demolition of the walls will be hauled and disposed as special waste. Approximately 105 tons of special waste concrete from the demolition of these walls is projected.

The demolition subcontractor will be responsible for dust control during demolition operations. Dust control will be accomplished through a combination of water suppression and waiting periods as necessary when dust levels become elevated.

3.5 TSCA Waste Removal

This section presents the details associated with removal of the remaining TSCA wastes at Building 3, including the concrete basement flooring, contaminated soil and gravel beneath the basement concrete flooring, and contaminated materials located outside the building near the Chip Chute and former Chip Chute loading dock.

3.5.1 Basement Concrete Flooring and Underlying Materials

Removal of PCB-contaminated concrete, gravel, and soil will begin once the building demolition operation has progressed far enough to the east to permit safe work. Approximately 30,000 ft² of basement concrete flooring (average thickness of 17 in.) will be removed between rows 9 and 20 (refer to Figure 3-1). In addition, approximately 3 in. of gravel base underlying the concrete flooring and approximately 1 ft. of clay soil underlying the gravel will be removed. The estimated volume of TSCA waste associated with the basement concrete flooring and underlying contamination is 2,970 CY (5,440 tons) (refer to Table 2-1).

The concrete flooring will be broken into manageable pieces using a track hoe (excavator) with a breaker attachment or other equivalent methods. As necessary, steel reinforcement in the concrete flooring will be cut using hydraulic shears attached to a track hoe or using a cutting torch. Once the concrete is removed to the extent that the underlying materials are exposed, PCB-contaminated gravel and soil will be excavated using a track hoe, loader, and/or backhoe. Selection of equipment for use during excavation activities will be based on availability and access. Contaminated materials will be loaded directly into end-dump trucks or stockpiled for eventual load-out into railcars, depending on which option is determined to be the most cost effective (refer to Section 3.10.2). Water that collects within the excavation will be managed as described in Section 3.7.

Heavy equipment will enter the building excavation from the west end. A temporary ramp will be constructed of imported soil and crushed rock or gravel to provide access to the base of the excavation. As the removal of TSCA wastes between Rows 9 and 20 progresses, it may be necessary for haul trucks to enter the contaminated area. In these instances, a crushed rock or gravel temporary cover will be placed on the ground over exposed soil within the excavation in the path of the equipment. The aggregate cover will provide a clean surface for equipment to travel, thus minimizing decontamination efforts. During the course of remediation activities, the temporary cover will be removed and disposed with other contaminated materials, unless confirmation samples from the underlying materials are below the cleanup level (7.6 ppm). In the latter case, the temporary cover will be used as a backfill for the excavation (refer to Section 3.9.1).

3.5.2 Materials Outside the Building Near Chip Chute

TSCA waste materials located outside the building will be removed from an area approximately 2,500 ft², located adjacent to the former Chip Chute and loading dock (refer to Figure 3-1). The estimated volume of TSCA wastes is 430 CY (673 tons), comprised of asphalt, metal shavings, gravel, and soil (refer to Table 2-1). The anticipated depth of TSCA waste is 5 ft. bgs.

Prior to removing the pavement, the railroad tracks (rails) traversing the area will be removed and disposed as non-hazardous waste. The rails will be removed with use of heavy equipment (i.e. track hoe with grapple attachment) and cutting torches as necessary. After the tracks are removed, the asphalt will be broken into manageable pieces and removed with an excavator. A breaker attachment to the track hoe will be used, if necessary. Once the materials underlying the asphalt are exposed, a track hoe and/or loader will be used to excavate the contaminated materials (gravel and soil) to approximately 5 ft. bgs. Selection of equipment for use during excavation activities will be based on availability and access. Waste materials will be loaded directly into end-dump trucks, roll-off containers, or rail cars, depending on which option is determined to be the most cost-effective (refer to Section 3.10.2). The open excavation will be protected in accordance with OSHA standards (i.e. perimeter fencing or sloping the sidewalls) until it is backfilled with crushed aggregate and soil from an off-site borrow source (refer to Section 3.9.1). Water that collects within the excavation will be managed as described in Section 3.7.

As discussed in Section 3.4, approximately 100 ft. of concrete foundation wall along this area, including the walls surrounding the Chip Chute, will remain in place until the TSCA wastes adjacent to the walls are removed. Following removal of the TSCA waste, the walls will be demolished with use of a track hoe and other heavy equipment as necessary. The concrete debris generated during demolition of the walls will be loaded directly into haul trucks or roll-off boxes and transported to a local, municipal landfill for disposal as a special waste.

3.5.3 Basement Soil Flooring and Soil in Chip Chute Area

During the initial phase of the RA, soil classified as TSCA waste was excavated from areas south and west of the concrete flooring in the basement. The results from two confirmation samples collected following excavation activities indicated the presence of residual PCBs greater than the 43.5 ppm action level. These areas (refer to Figure 3-2) were not excavated further during the initial RA. One area is located adjacent to the concrete flooring near Sector H16. The other area is located in Sector H9. Similarly, approximately 3 ft. of TSCA soil in the Chip Chute remained following the first phase of the RA. These areas will be excavated to complete the removal TSCA wastes in accordance with the RAWP.

3.6 Additional Soil and Concrete Remediation

Following the demolition of the building and the removal of TSCA waste materials, additional soil remediation will be performed to meet the site risk-based cleanup level (refer Section 2.6) of 7.6 ppm for residual PCBs. Areas where PCBs are known to exceed the site cleanup level and where additional soil excavation will be required include:

- The base and sidewalls of excavations from the removal of TSCA wastes conducted during the initial phase of the RA (located south and west of the concrete flooring in the basement); these areas were previously remediated to 43.5 ppm, and the results from confirmation samples indicated the presence of PCBs greater than 7.6 ppm in select areas.
- Two additional areas identified based on the results of the Building 3 Site-Specific EBS (March 2002). One area is located near Sector K9. The other area is located near Sector C8.
- An area near Sector E28 associated with sample SS15 collected during the Field Investigation.

- An oil-stained area located between Sectors C22 and D22 associated with sample SS30 collected during the Field Investigation.
- An area of oil-stained soil near Sector E38 (approximately 20 ft. x 20 ft.) where PCBs were detected during the Phase I Environmental Baseline Survey (EBS) of SLAAP and documented in the *Final Environmental Baseline Survey Report for the St. Louis Army Ammunition Plant, St. Louis, Missouri, December 28, 2000* (Tetra Tech, 2000).

These areas are shown on Figure 3-2. The estimated quantity of special waste soil from these areas is 345 tons (refer to Table 2-2). The abovementioned areas, as well as the excavations associated with the removal of TSCA wastes (refer to Section 3.5), may require additional soil excavation if residual PCB levels continue to exceed the site cleanup level following initial excavation.

The need to remove additional soil from remediated areas will be based on the results of confirmation samples (refer to Section 3.8), collected after the soil is excavated to initial target depth. If the PCB concentration from confirmation samples is between 7.6 ppm and 43.5, additional soil will be excavated and disposed as special waste. Similarly, if the PCB concentration exceeds 43.5, additional soil will be excavated and disposed as TSCA waste. It is unknown at present whether any special waste will be encountered at the base of the excavations outside the building and beneath the basement concrete flooring; therefore, an estimated quantity has not been included in this Addendum. Confirmation sampling will be conducted in all excavated areas to determine the final extent of excavation. Additional excavation work, if required, will be conducted as described in Section 3.5.

The concrete footer at Column G25 is known to be contaminated with PCBs above the site cleanup level. This column will be demolished and disposed as special waste concurrently with the removal of the concrete flooring in the basement.

Furthermore, the materials inside the basement catch basin (refer to Figure 2-4) contain PCBs in excess of the site cleanup level. The contents of the catch basin will be excavated concurrently with other soil remediation work in the basement.

3.7 Water Management During Excavation Activities

The excavations associated with the removal of PCB-contaminated soil (refer to Sections 3.5 and 3.6) will remain open temporarily until they are backfilled. Water that could potentially collect within the excavations will consist primarily of precipitation and groundwater; although ground water infiltration is not anticipated to be a significant source of water. Regardless of the source, it will be assumed that the water is potentially contaminated with PCBs. Thus, the water in the excavations will be removed, contained, and sampled. Water from the excavations will be pumped directly to a water truck or into a temporary holding tank (i.e. Baker tank) staged on the north side of the building. A grab sample of water from the holding tank will be collected and submitted for PCB analysis. If the PCB concentration is below the limit allowed by the St. Louis Metropolitan Sewer District, the water will be discharged to the sanitary sewer via a nearby manhole. (Note: A special discharge permit application will be submitted to the St. Louis Metropolitan Sewer District for approval prior to discharge.) If the PCB concentration precludes discharge to the sanitary sewer system, the water will be hauled off-site for commercial treatment or disposal.

To prevent storm-water runoff from outside the excavation boundaries from contacting soil within the excavations, appropriate control measures will be implemented. In general, control measures will include placement of sand bags placed around open excavations and the use of tarps or covers to shield excavations if extremely heavy rains are expected. Active systems (such as temporary sumps with sump pumps) will only be implemented if necessary. Furthermore, to prevent storm water from becoming contaminated due to soil-loading operations, haul trucks will be loaded outside the footprint of the excavation or on a gravel surface (refer to Section 3.5.1).

3.8 Soil Confirmation Sampling

Under TSCA's self-implementing remediation standards (40 CFR 761.61), samples must be collected to verify/confirm that site PCB cleanup goals were achieved. As discussed in Section 1.1 and further in Section 2.6, the cleanup goal for the Building 3 site is based on a risk assessment conducted pursuant to 40 CFR 761.61(c). This level was determined to be 7.6 ppm (refer to Appendix C).

Confirmation sampling will not apply to the following:

- **Building structural materials:** Following demolition of the building, all PCB contamination within the building above the basement floor level will have been removed from the site, thereby eliminating the need to sample these materials.
- **Concrete left in the building footprint:** Most of the concrete footers that will remain in the building footprint were previously characterized and found to be non-contaminated or contaminated below the site cleanup level. The footers containing high levels of PCBs will either be decontaminated or removed and disposed; and, approximately 100 footers between Rows 9 and 20 will be removed and disposed along with the concrete flooring in that area. The concrete flooring between Rows 20 and 22 was previously scabbled to a depth of approximately 2 in. beneath the floor surface. Confirmation sampling verified that PCBs were reduced below the PCB cleanup level.

Thus, confirmation sampling will only apply in areas where soil will be excavated. These areas are listed in the table below. Confirmation samples will be collected from the base (floor) and sidewalls of the excavation. Samples will be submitted to an off-site laboratory for PCB analysis (SW-846 Method 8082). Confirmation samples will be collected according to the following criteria:

- **Floor:** Confirmation samples will be collected in accordance with the single point source procedure outlined in 40 CFR 761.289 (Compositing Samples), contained in Subpart O of TSCA [*Sampling to Verify Completion of Self-Implementing Cleanup and On-Site Disposal of Bulk PCB Remediation Waste and Porous Surfaces in Accordance with 40 CFR 761.61(a)(6)*].
- **Sidewalls:** Confirmation samples will be collected from the sidewalls (perimeter) of the excavation at a frequency of one sample for every 20 linear feet. The samples will be distributed evenly along the perimeter of the excavation. Each sample will be comprised of soil collected from the surface to a maximum depth of 3 in. below the surface.

Based on the criteria specified above, Table 3-1 presents a summary of the estimated number of confirmation sample initially required. The initial proposed confirmation sample locations are shown on Figure 3-4. Laboratory analysis will be performed within 7 days of sample collection. If PCB levels in the confirmation samples are less than the site cleanup standard (7.6 ppm), no

further excavation will be conducted. If the PCB levels exceed the site cleanup standard, additional soil will be removed from the area(s) associated with the sample(s) that failed confirmation analysis. The process of excavation and confirmation sampling/analysis will be repeated as needed until the PCB concentration of the confirmation samples indicate that soil has been remediated to site cleanup standard. Sampling and analytical protocols are presented in the SAP (Appendix A of the RAWP). QA/QC samples (i.e. duplicates, spits, MS/MSD, rinsates) will be collected and analyzed at the frequencies specified in the SAP.

Confirmation samples will also be collected in the soil beneath the buried sewer lines that are removed as discussed in Section 3.3.2. One sample will be collected for every 50 linear feet of underground piping. Composite samples will be collected from the pipe trench to a depth of 6 inches beneath the pipe. If PCB concentrations are below the site cleanup level, no further action will be taken with regard to the soil beneath the sewer piping. If PCBs are present at concentrations exceeding the site cleanup level, the soil associated with the failed confirmation sample(s) will be removed (excavated). In general, soil will be excavated along the sewer line 25 feet on each side of the sample location where the exceedance occurred. Soil will be excavated to a depth of 1 ft. below the bottom of the pipe trench. Approximately 1 ft. of soil will also be removed from the sidewalls of the trench. Confirmation samples will again be collected following excavation the additional contaminated soil. The process of confirmation sampling and excavation will be repeated as needed until the site cleanup level is achieved.

3.9 Site Restoration

This sections presents details regarding site restoration following demolition and removal of TSCA and PCB special wastes.

3.9.1 Backfill

Backfilling of excavations will not be authorized until the results of confirmation sampling indicate that PCBs have been reduced to the risk-based cleanup standard established for the site. The excavations that will be backfilled include:

- The primary building excavation, which incorporates the excavations within the building footprint associated with the removal of TSCA wastes and the removal other PCB-contaminated soil as necessary.

- The excavation adjacent to the building for the removal of TSCA waste near the Chip Chute loading dock

The building excavation will be backfilled to the top of the concrete footers in the basement with 1-in.-minus granular material. The granular backfill will be spread over the base of the excavation to a level consistent with the top of the footers and traffic-compacted with the use of a dozer or other heavy equipment. After backfilling with granular material, clay soil procured from a borrow source (clean off-site fill) will be used as backfill to ground surface. [Note: The excavation outside the building footprint will be backfilled with clay soil only.] Soil backfill material will be moisture-conditioned, placed in 12-in. lifts, and compacted in accordance with Specification 02315 (refer Appendix B). As the final lifts of backfill material are being placed and compacted, land-surveying techniques will be used to establish final grades. After the excavation is backfilled, the excavation area will be graded and restored to match the existing surfaces and to promote area drainage (i.e., to avoid ponding). Pavement and sub-base materials will not be restored. During the time that excavations are open prior to backfilling, construction fencing will be erected in accordance with OSHA standards. Off-site soil will be tested for the parameters listed in Specification 02315.

To increase the efficiency of field operations, backfill materials may be placed within the building excavation concurrent with demolition activities. For example, once the demolition work is completed between Rows 1 and 20, backfill will be placed in the area between Rows 1 and 6. Backfilling will occur only after demolition work has advanced far enough for personnel and equipment to work safely (i.e. maintain a safe distance from demolition operations).

3.9.2 Seeding

Following backfilling and grading, the disturbed area will be seeded to “field seed” quality (referencing USACE standards). Prior to application of seed, the soil surface will be prepared (including debris removal and tilling) to the extent necessary for optimal growth establishment as recommended by the seed supplier. Seed will then be applied using methods recommended by the seed supplier. Topsoil will not be used. Mulch and soil amendments (i.e. fertilizer) will be applied as necessary. The seed establishment period will last until a satisfactory stand of grass plants for a “field” area is attained.

3.10 Material Handling

This section presents handling requirements for materials that will be generated during the RA.

3.10.1 On-Site Staging

Materials resulting from the removal of TSCA wastes will be loaded directly into end-dump trucks, roll-off containers, or railcars for transport to an off-site disposal facility. Temporary staging or stockpiling of TSCA waste materials on-site may be required as follows:

- Roll-off containers may be temporarily stored on-site prior to transport. Roll-offs will be staged within the paved area north of the building. Empty roll-off containers will also be staged in this area.
- During soil/waste excavation activities, it may be necessary to temporarily stockpile materials. When this occurs, the excavator may place materials to the side of the excavation. The temporarily stockpiled materials will be placed on a plastic liner to further prevent the spread of contaminated soil. In addition, the stockpile will be covered with plastic sheeting and secured during non-work hours.

Debris from demolition activities will be directly loaded into haul trucks for immediate transport off-site. If necessary, building materials will be temporarily stockpiled within the building excavation.

Roll-off boxes for non-hazardous trash and non-demolition special wastes (i.e. PPE) will be staged within the paved area near the east end of Building 6 as shown on Figure 3-2. Roll-off boxes for ACM waste will be staged at various locations around Building 3, depending on convenience for load-out.

3.10.2 Load-Out

TSCA waste materials will be loaded-out using a combination of end-dump truck and roll-off boxes. The following table summarizes each method:

Method	Description	Est. Payload per Unit
End-dump trucks	Trucks will be positioned adjacent to the excavation or stockpile area during loading.	24 tons (steel dump)

Method	Description	Est. Payload per Unit
	Trucks will enter building excavation via ramp at west end. Materials will be live-loaded to avoid charges for standby time.	21 tons (aluminum dump)
Roll-off containers	Materials will be loaded directly into roll-off containers positioned adjacent to the excavation or in the general vicinity of demolition activities. Roll-offs will be temporarily staged on-site prior to transport.	17 tons

The actual method(s) for loading/transporting TSCA waste materials will be selected based on the ability to stockpile materials on-site and the feasibility of live-loading the waste materials. It is anticipated that most waste materials, including the soil and concrete removed from the basement, will be live-loaded into end-dump trucks. Regardless of the method, waste materials will be loaded with the use of an excavator or loader into the appropriate container and filled to capacity (payload). A canvass tarp or other cover will be placed over the top of roll-off containers at all times except during active load out. The tarp will be secured to the sides of the container prior to transport.

The following methods will be used for loading-out waste materials not classified as TSCA or PCB special waste:

- **Demolition wastes:** Building debris, including special waste concrete, from demolition activities will be loaded with excavators and loaders directly into haul trucks for immediate transport off-site.
- **ACM:** Asbestos disposal bags containing piping insulation and floor tiles will be loaded by hand into a closed-top roll-off box that is double-lined with plastic sheeting. Transite panels will be loaded into an open-top roll-off box; the panels will be burrito-wrapped prior once the container is filled to capacity.
- **PPE:** Special waste generated from the disposal of PPE (boot covers, disposable coveralls, gloves, etc.) potentially contaminated with PCB less than 50 ppm will be placed into a 20-cubic yard roll-off container. The container will be designated as "Special Waste Only."

- **General trash:** Non-hazardous, general trash will be placed into a municipal trash container or dumpster.

3.10.3 Off-Site Transportation and Disposal

This section presents the details associated with off-site transportation and disposal of TSCA waste, ACM waste, and special waste. Following load-out, trucks carrying PCB-contaminated materials will be transported to a TSCA-certified disposal facility. Roll-off containers containing “special waste” and ACM will be transported to a municipal landfill licensed by the state to accept such waste material. Transportation and disposal of waste materials generated during the project will be performed in general accordance with Specification 02120A contained in Appendix C of the RAWP. Transportation activities will comply with Department of Transportation (DOT) standards and applicable state and local transportation regulations. Off-site shipments of waste materials will be packaged, marked, labeled, and placarded in accordance with 49 CFR Parts 172 and 173. The commercial carrier of waste materials destined for disposal shall comply with Federal Motor Carrier Safety Regulations (FMCSRs). When transporting materials classified as hazardous under DOT 49 CFR Part 172, carriers shall be certified by the Federal Motor Carrier Safety Administration. Transport vehicles shall be in good condition, safe to operate, and compliant with Federal Motor Vehicle Safety Standards (49 CFR Part 571). The gross weight of transport vehicles shall not exceed state limits. Off-site shipments shall be accompanied by the required shipping documents, including manifests and/or bill-of-ladings. Disposal of PCB-contaminated waste will be performed in accordance with 40 CFR 761. A USACE representative will sign all waste shipping manifests. As required under TSCA, the receiving facility shall provide “certificates of disposal.”

3.11 Field Documentation

This section presents details regarding field documentation of removal activities. Field documentation associated with sampling and analysis (sample labeling, sample collection field sheets, chain-of-custody, etc.) is discussed in the SAP included as Appendix A of the RAWP. Field documentation associated with quality control and corrective action (inspection checklists, daily quality control reports, field work variances, etc.) are discussed in Section 6.0. Field documentation associated with health and safety activities (air monitoring log, site entry log, equipment safety inspection checklists, etc.) is addressed in the SHERP included as Appendix B of the RAWP.

3.11.1 Field Logbook

Field logbooks will be maintained to record all pertinent information. Entries will be as descriptive and detailed as possible so that a particular situation can be reconstructed without reliance on the collector's memory. Field logbooks will be maintained by the Field Supervisor.

The cover of each field logbook will contain the following information:

- Project name and number
- Book number
- Activity type
- Start date
- Stop date.

Entries to a field logbook will be made daily and, at a minimum, will consist of the following:

- Date
- Start time
- Weather
- All field personnel present
- Visitors to the site (time, name, and company)
- Level of personnel protection used
- Activities conducted
- Air monitoring readings, if applicable
- Pertinent field observations
- Field measurements, if applicable
- Description of all related activities
- Signature of the person making the entry.

All entries will be made in indelible ink. No erasures are permitted. If an incorrect entry is made, the data shall be crossed out with a single strike mark and initialed. Entries will be organized into easily understandable tables, if possible.

3.11.2 Photographs

Color digital photographs will be taken prior to, during, and after conducting field activities. Photographs will be tracked with a numbered photograph log that will include the project name, date, and description of activity or location.

3.11.3 Recordkeeping

During the RA, pertinent records will be maintained in a secure file located in the field administration office. These records include, but are not limited to, the following:

- Waste shipment manifests, bill-of-ladings, or other shipping documents
- Contract documents
- Procurement records (i.e. purchase orders)
- Receipts for delivery of materials and equipment
- Equipment maintenance records
- Equipment operator certificates
- Logbooks
- Photographs
- Project correspondence
- Training records
- Medical surveillance records
- Quality control records (refer to Section 6.0)
- Sample collection and analytical records and data (refer to SAP, Appendix A of the RAWP)
- Health and safety records (refer to SHERP, Appendix B of the RAWP)

4.0 Regulatory Requirements

The regulatory requirements or standards applicable to the RA are presented in Tables 4-1, 4-2, and 4-3 of the RAWP. This information was compiled by reviewing federal, state, and local environmental statutes in general accordance with the ARAR (applicable and relevant and appropriate requirements) process under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Although SLAAP is not a CERCLA site, the process for identifying ARARs under CERCLA provides a convenient framework with which to identify the applicable standards. PCB contamination associated with Building 3 is subject to the rules and regulations set forth in the TSCA, as amended by the Mega Rule. EPA has indicated that the clean up standards set forth in the Mega Rule supercede the standards set forth in the NON. Accordingly, the lifting of the NON is be contingent upon the final clean up of Building 3 to standards acceptable under TSCA. Standards governing cleanup approaches, cleanup levels, and disposal requirements are found in 40 CFR 761.61. This RA is being conducted in accordance with 40 CFR 761.61(a) for self-implementing on-site cleanup and disposal of PCB remediation waste. Paragraph (a)(4) of 40 CFR 761.61 specifies clean up standards for "high occupancy areas" and "low occupancy areas." These standards are not applicable, because the building will no longer be occupied once it is demolished. For this reason, a risk-based cleanup standard will be determined for this RA in accordance with 40 CFR 761.61(c).

5.0 Site Safety and Health

All work activities will be performed using safe working practices as detailed in the Safety Health and Emergency Response Plan (SHERP) included as Appendix B of the RAWP and Addendum No. 1 to the SHERP included as Appendix A of this document. Field personnel working on the RA will become familiar with and follow the protocols outlined in the SHERP.

6.0 Contractor Quality Control

This section provides the criteria for the performance of inspections of each Definable Feature of Work (DFW) associated with the RA. Inspections are the processes whereby the Quality Control (QC) Inspector, by examination or measurement, determines that an activity complies with the specified quality requirements. The inspection system is based on the USACE three-phase system of control to cover the activities. The three-phase inspection system consists of preparatory, initial, and follow-up inspections for applicable DFWs.

6.1 Definable Features of Work

A DFW is defined as a major work element that must be performed in order to execute and complete the project. It consists of an activity or task that is separate and distinct from other activities and requires separate control. The following DFWs have been identified for the planned field activities:

- Site preparation
- Pipe and asbestos removal
- Removal of TSCA wastes outside building near Chip Chute
- Removal of gravel and soil beneath basement concrete flooring
- Building demolition
- Removal of additional PCB-contaminated areas identified during Site-Specific EBS
- Excavation backfilling
- Site restoration
- Transportation and disposal

6.2 QC Inspections

The QC Inspector will coordinate inspection activities with the Project Manager/Field Supervisor, subcontractors, and field personnel. Inspection activities will be performed on a daily basis.

6.3 QC Inspections

The QC Inspector will coordinate inspection activities with the Project Manager/Field Supervisor, subcontractors, and field personnel. Inspection activities will be performed on a daily basis.

6.3.1 Preparatory Inspections

Preparatory inspections will be performed prior to the initiation of all DFWs. The preparatory inspection is performed in advance of any work being performed to determine whether or not everything is properly in place and ready to initiate the work activity. This inspection will be conducted by the QC Inspector and will be attended by field personnel and subcontractors. The preparatory inspection will be scheduled prior to the start of the DFW. All affected parties will be notified in advance of the inspection to coordinate their participation. The preparatory inspection will include, but is not limited to:

- Review of pertinent contract requirements and plans
- Review of required control inspections and test requirements
- Review of reports, forms, and checklists that need to be filled out during the activity
- Review of subcontracts and purchase orders
- Review of required licenses, permits, and certifications
- Establish that required planning documents have been reviewed and approved by USACE and regulators
- Establish that the required materials and equipment for commencement of the DFW are on-hand, available, in working order, and are in accordance with plans and calibration requirements
- Establish that the preliminary work required to begin the DFW is complete and conforms to approved plans
- Schedule the date that the initial inspection, if required, will be performed
- Review and discuss the SHERP requirements for the DFW.

The preparatory inspection checklist is included in Appendix E of the RAWP.

6.3.2 Initial Inspections

Initial inspections will be conducted at the initiation of a DFW. The initial inspection will provide the opportunity for the QC Inspector to observe the actual initiation of the work activity and the individual segments of the DFW. The inspection will be performed on a representative sample of work to evaluate the following criteria:

- Compliance with the work plans and other contract requirements

- Acceptable levels of workmanship
- Proper operation of equipment
- Identify use of defective or damaged materials
- Identify improper procedures or methods
- Acceptable test or inspection results
- Compliance with the SHERP
- Completion or collection of pertinent records

The initial inspection checklist is included in Appendix E of the RAWP.

6.3.3 Follow-Up QC Inspections

Follow-up QC inspections of field activities will be performed on a daily basis when work on a DFW is in progress. The Daily QC inspections will be performed until all work on a DFW is completed. The following items will be performed during the Daily QC inspection:

- Verify compliance with the plans and other contract requirements
- Verify proper operation of equipment
- Verify level of workmanship, if applicable
- Verify test or inspection results
- Verify nonconformance issues are identified, corrected, and re-inspected
- Verify compliance with the SHERP
- Verify completion or collection of pertinent records

The follow-up inspection checklist is included in Appendix E of the RAWP.

6.3.4 QC Inspection Documentation

The preparatory, initial, and follow-up inspections will be documented on forms. Preparatory, initial and daily QC inspection checklists are provided in Appendix E of the RAWP. The daily QC inspection checklist will be attached to the Daily Quality Control Report (DQCR) (refer to Section 6.4) and submitted to the USACE on a daily basis during the RA.

6.4 Daily QC Reports

DQCRs will be prepared to document field activities performed. Quality control personnel will prepare DQCRs with input from the Field Supervisor, sampling personnel, and others conducting the field activities. The DQCRs will contain the following information pertaining to the field activities:

- Weather information
- Equipment usage
- Quantities of work completed
- Results of confirmation sampling
- Field instrument measurements
- Verbal instructions received from CENWK or AMCOM personnel
- Problems encountered during field work
- Field Work Variances
- Applicable forms, logs, and checklists included in this work plan.

6.5 Correction Actions

Corrective actions will be implemented to correct nonconformances identified during QC inspections or during the course of conducting activities. A nonconformance is defined as a deficiency in implementation of a procedure or standard that renders the quality of an item or activity unacceptable or indeterminate with respect to the acceptability criteria. Correction of nonconformances will focus on determining the cause of the deficiency and instituting actions to correct the deficiency and prevent recurrence.

Corrective actions will be implemented and documented via a Corrective Action Report (CAR) (refer to Appendix E of the RAWP). No staff member will initiate corrective action without prior communication of findings through the proper channels. If corrective actions are deemed insufficient, work may be stopped through a stop-work order issued by the Contractor Project Manager and/or the CENWK Project Manager

6.5.1 Nonconformance Reporting

Noncompliance with specified criteria will be documented through a formal nonconformance control and corrective action program. Personnel who identify a nonconformance are responsible for notifying the Contractor Project Manager of the nonconformance. The Contractor Project

Manager will discuss the nonconformance with USACE on-site representative to determine if the nonconformance has been properly described and that applicable project requirements or criteria have not been met to warrant issuance of a Non-Conformance Report (NCR) (refer to Appendix E of the RAWP). The Contractor Project Manager will immediately notify the CENWK Project Manager of any major or critical deficiencies identified during the course of project execution.

6.5.2 Nonconformance Disposition and Tracking

Corrective actions required to bring nonconforming conditions into compliance will be approved by the Contractor Project Manager prior to implementation. Corrective actions will be documented in a field CAR, which will be attached to DQCR. NCRs will remain on open status and tracked until the corrective actions have been implemented and verified acceptable by the Contractor Project Manager. If appropriate, the Contractor Project Manager will ensure that no additional work associated with the nonconforming activity is performed until the corrective actions are completed. This will be implemented through a stop-work order issued by the Contractor Project Manager.

6.5.3 Field Work Variances

Changes to approved plans or procedures may be implemented based on unanticipated field conditions or determination of improved field methods. Request for approval to vary from approved plans, specifications or procedures will be submitted to the CENWK with a Field Work Variance (FWV) (refer to Appendix E of the RAWP). Minor variances can be implemented in the field prior to receipt of written approval of the FWV when approved by the USACE on-site representative. Minor variances are defined as those variances that do not affect project cost, schedule, quality or quantities. Major variances require written approval prior to implementation. Major variances impact cost, schedule, quality, and quantities and vary from the approved plans, specifications, or procedures. FWVs will be submitted to the USACE Contracting Officer Representative (COR) for approval.

7.0 Project Schedule

The initial proposed schedule of all project activities is presented in Figure 7-1. Asbestos abatement activities will commence on July 8, 2002. It is anticipated that asbestos abatement will be completed in early August 2002. Asbestos abatement activities will be followed by sewer piping removal, which is anticipated be completed by late August 2002. Demolition activities will begin after the required ACM and sewer piping is removed and the concrete flooring and columns designated as special waste are painted. (Painting of the concrete is designed to facilitate segregation during demolition.) Demolition activities are expected to last approximately 2 months. PCB remediation activities will take place during the latter portion of this time period. Backfilling operations are expected to last approximately 2 months. A draft Removal Action Report will be distributed for review within 3 weeks following the completion of field activities.

The work schedule for asbestos abatement and piping removal will consist of 10 consecutive work days followed by a 4-day break. Work will be conducted from approximately 7 AM to 7 PM each day. Fieldwork during demolition and remediation activities will be contingent upon the demolition subcontractor's schedule. Work during the demolition phase will be performed Monday through Friday, with no project work occurring on weekends. Work will be conducted from approximately 7 AM to 5 PM each day. Once backfilling operations begin, the fieldwork schedule will return to 10 consecutive work days followed by a 4-day break, with work occurring between 7 AM to 7 PM each day, depending on available daylight. Work schedules will be modified as necessary to accommodate holidays.

8.0 References

- Arrowhead Contracting, Inc. 2001a. *Removal Action Work Plan, PCB TSCA Wastes, Building 3, St. Louis Army Ammunition Plant, St. Louis, Missouri.* November.
- Arrowhead Contracting, Inc. 2001b. *Field Investigation Report, Determination of PCB TSCA Waste Quantities, Building 3. St. Louis Army Ammunition Plant, St. Louis, Missouri.* November.
- Arrowhead Contracting, Inc. 2001c. *Sampling and Analysis Plan. Determination of PCB TSCA Waste Quantities, Building 3, St. Louis Army Ammunition Plant, St. Louis, Missouri.* June.
- Tetra Tech EM. Inc.. 2000. *Final Environmental Baseline Survey Report, Saint Louis Army Ammunition Plant, St. Louis, Missouri.* December.

Tables

Table 1-1
Classification and Disposition of Waste Materials at Building 3

Description and General Location	Material(s)	Figure Reference	Waste Classification	Disposition
Concrete flooring and footers in basement between Rows 9 and 20 (containing PCBs > 50 ppm)	Concrete	Fig. 3-1	TSCA waste	Off-site disposal at a TSCA facility (The Environmental Quality Company, Wayne, Michigan)
Gravel and soil (to approximately 1 ft bgs) beneath basement concrete flooring between Rows 9 and 20 (containing PCBs > 50 ppm)	Gravel, soil	Fig. 3-1	TSCA waste	Off-site disposal at a TSCA facility (The Environmental Quality Company, Wayne, Michigan)
Soil, metal shavings, and pavement outside Building 3, in the vicinity of the former Chip Chute load-out area (PCBs > 50 ppm)	Asphalt, gravel, metal shavings, soil	Fig. 3-1	TSCA waste	Off-site disposal at a TSCA facility (The Environmental Quality Company, Wayne, Michigan)
Basement soil flooring containing PCBs > 50 ppm, including soil flooring in Chip Chute area	Soil	Fig. 3-2	TSCA waste	Off-site disposal at a TSCA facility (The Environmental Quality Company, Wayne, Michigan)
Basement soil flooring containing PCBs > 7.6 ppm (but less than 50 ppm)	Soil	Fig. 3-2	PCB special waste	Off-site disposal at a local municipal landfill permitted to accept PCB special wastes
Intermediate concrete support columns (292 ea) in the basement between Rows 9 and 20	Concrete	Fig. 3-3	PCB special waste	Off-site disposal at a local municipal landfill permitted to accept PCB special wastes
Oil-stained concrete footer at G25 (containing PCBs > 7.6 ppm)	Concrete	Fig. 3-3	PCB special waste	Off-site disposal at a local municipal landfill permitted to accept PCB special wastes
Concrete flooring on first and second floors, containing PCBs < 50 ppm	Concrete	Fig. 2-3	PCB special waste	Off-site disposal at a local municipal landfill permitted to

Description and General Location	Material(s)	Figure Reference	Waste Classification	Disposition
				accept PCB special wastes
Building foundation wall adjacent to Chip Chute load-out area	Concrete	Fig. 2-4	PCB special waste	Off-site disposal at a local municipal landfill permitted to accept PCB special wastes
Basement concrete walls around Chip Chute area	Concrete	Fig. 2-4	PCB special waste	Off-site disposal at a local municipal landfill permitted to accept PCB special wastes
Cast iron sewer piping in basement containing PCBs < 50 ppm	Piping	Fig. 2-4	PCB special waste	Off-site disposal at a local municipal landfill permitted to accept PCB special wastes
Building materials located above foundation, excluding ACM (windows, floor tile, transite) and concrete flooring classified as special waste (Figure 2-3)	Brick, concrete, concrete block, roofing, piping, sheetrock, steel, etc.	Fig. 3-3	Non-hazardous construction waste	Off-site disposal at a construction landfill or municipal landfill
Building foundation wall, except approximately 100 ft adjacent to PCB contamination associated with former Chip Chute load-out area	Concrete	Fig. 3-3	Non-hazardous construction waste	Off-site disposal at a construction landfill or municipal landfill
Building materials above foundation classified as ACM	Select floor tile, transite on the exterior of the building, transite on the first floor ceiling, windows containing ACM putty and glaze	Fig. 3-3	ACM waste	Off-site disposal at a local municipal landfill permitted to accept ACM; windows will be extracted during demolition and shipped off-site to a certified scrap recycler
Fluorescent light bulbs (FLBs) and ballasts	Lighting	Fig. 3-3	Non-hazardous universal wastes	Shipped off-site to a certified recycler
Miscellaneous fluids and sediment	TBD	N/A	Contingent upon waste characterization	Disposed off-site in a manner commensurate with specific waste classification
Basement soil flooring not otherwise	Soil	N/A	N/A	Remain within building footprint

Description and General Location	Material(s)	Figure Reference	Waste Classification	Disposition
remediated (i.e. non-PCB contaminated and PCBs < 7.6 ppm)				
Concrete flooring between Rows 20 and 22	Concrete	N/A	N/A	Remain within building footprint
Concrete footers for primary building columns, except those removed due to PCB contamination	Concrete	N/A	N/A	Remain within building footprint

Table 1-2
Summary of Project Organization and Responsibilities

KEY PERSONNEL	ORGANIZATION	ROLE	RESPONSIBILITIES
Sandy Olinger	AMCOM	Project Manager	<ul style="list-style-type: none"> Contract management
Heather Black	SEMCOR	Technical Consultants	<ul style="list-style-type: none"> Technical consultant to AMCOM
Brad Eaton	CENWK	Project Manager	<ul style="list-style-type: none"> Technical oversight Right of entries Management of CENWK technical personnel Oversight of Arrowhead Contract
Brian Shay	U.S. Army, Fort Leonard Wood	Contracting Officer Representative	<ul style="list-style-type: none"> Contract administration
Jean Jennings	CENWK	Contracting Officer	<ul style="list-style-type: none"> Contract administration
Bonnie Lowe	CENWK	Contracting Specialist	<ul style="list-style-type: none"> Contract administration
Ray Allison	U.S. Army, Fort Leonard Wood	USACE Oversight	<ul style="list-style-type: none"> Perform periodic field oversight of RA activities
Dan Mitchell	CENWK	Health & Safety	<ul style="list-style-type: none"> CENWK H&S Oversight
Daksha Dalal	CENWK	Project Chemist	<ul style="list-style-type: none"> Chemistry oversight
Kurt Baer	CENWK	Project Engineer	<ul style="list-style-type: none"> Technical oversight
Laura Percifeld	CQAB	Laboratory Supervisor	<ul style="list-style-type: none"> QA sample analysis Assign LIMS number for off-site analysis
Greg Wallace	Arrowhead	Project Manager/Field Supervisor	<ul style="list-style-type: none"> Primary contact point with CENWK and AMCOM Overall responsibility for all phases of work Oversight of field activities Technical direction to field subcontractors and field personnel
Scott Siegwald	Arrowhead	Site Health and Safety Officer and QA/QC Manager	<ul style="list-style-type: none"> Directing overall chemical QA\QC program Oversight of site health and safety program Oversight of off-site Chemical Laboratory Coordination with CQAB Preparation of Daily Quality Control Reports Sample packaging and

KEY PERSONNEL	ORGANIZATION	ROLE	RESPONSIBILITIES
			<ul style="list-style-type: none"> shipping Waste profiling and manifesting Preparation of report
Kerry Pruett Terry Thompson Randy Glover	Arrowhead	Heavy Equipment Operators	<ul style="list-style-type: none"> Operation of heavy equipment in support of concrete, gravel, and soil removal and load-out Asbestos abatement
Ben Williams Andy Arnold Aaron Mathena Matthew Sobaski James Bell	Arrowhead	Environmental Technicians	<ul style="list-style-type: none"> Site layout Concrete, waste, soil , asbestos, and pipe removal Preparation of sample for off-site analysis Collection of field QA/QC samples Decontamination
Leland Sumptur	Asbestos Consulting and Testing (ACT)	Air Sampling Professional, Project Manager	<ul style="list-style-type: none"> Oversight during ACM removal Air sampling during abatement activities
Arnold Spirtas	Spirtas Wrecking Company	Building Demolition Project Manager	<ul style="list-style-type: none"> Demolition of Building 3 to basement floor level Transportation and disposal of demolition debris and PCB special wastes
Brian Erskine	EQ – The Environmental Quality Company	Project Manager	<ul style="list-style-type: none"> Transportation and disposal of TSCA wastes
TBD	TBD – Local trucking company	TBD	<ul style="list-style-type: none"> Transportation of PCB special waste
TBD	TBD – Local municipal landfill	TBD	<ul style="list-style-type: none"> Disposal of PCB special wastes and ACM
Kendall Lindquist Scott Meeks	Analytical - Management Laboratories (AML)	Analytical laboratory for off-site analysis of PCB and other environmental samples	<ul style="list-style-type: none"> Chemical analysis Laboratory QA/QC Raw data summary report

Note: Any changes in personnel assignments are subject to CENWK approval.

**Table 2-1
Estimate of TSCA Waste Quantities**

Location	Description of TSCA Waste (>43.5 PPM)	Media	Area (sq. ft)	Avg. Depth (in.)	Volume (cu. ft)	TSCA Waste Quantity (tons)
Outside building, near Chip Chute	One large area (2,200 ft ²) and one smaller area (300 ft ²) adjacent to Building 3, north of Chip Chute near loading dock; includes asphalt, gravel base, metal shavings (waste), and soil beneath gravel base	Asphalt	2,500	4	833	54
		Waste	2,500	4	833	50
		Gravel	2,500	36	7,500	413
		Soil	2,500	12	2,500	156
Soil in Chip Chute Area	Soil beneath the former Chip Chute waste pile that was not removed during the first phase of the RA	Soil	400	36	1,200	75
Soil flooring in basement	Flooring in basement previously excavated during the first phase of the RA, but associated with confirmation sample results exceeding 43.5 ppm, includes portions of Sectors H09 and H16	Soil	150	12	150	9
Concrete flooring in basement between Rows 9 and 20	Concrete flooring in basement contaminated with PCBs > 43.5 ppm at various locations; all concrete will be removed to access contamination in gravel base and soil beneath the concrete	Concrete	30,000	17	42,500	3,188
Beneath flooring in basement between Rows 9 and 20	Heavily oil-stained gravel base material beneath concrete flooring and soil beneath the gravel base	Gravel	30,000	3	7,500	375
		Soil	30,000	12	30,000	1,875

TOTAL

6,195

NOTES:

Railroad tracks traversing contaminated areas outside building will be removed (prior to excavating) and disposed as non-hazardous waste.

Table 2-2
Estimate of PCB Special Waste Quantities

Location	Description of PCB Special Waste (< 50 ppm)	Media	Area (sq. ft)	Avg. Depth (in.)	Volume (cu. ft)	PCB Special Waste Quantity (tons)
Soil flooring in basement	Areas south and west of concrete flooring previously remediated to < 50 ppm, but residual contamination remains greater than site cleanup level (7.6 ppm)	Soil	6,400	0.5	267	17
	Oil-stained areas near Sectors K9 and C8 containing PCBs > 7.6 ppm, identified during the Site-Specific EBS	Soil	800	48	3,200	192
	Oil-stained area between Sectors C22 and D22 associated with sample SS30 collected during Field Investigation	Soil	800	24	1,600	88
	Oil-stained area near Sector E28 and associated with sample SS15 collected during the Field Investigation	Soil	400	12	400	22
	Area near Sector E38 referenced in the Phase I EBS (Tetra Tech, 2000)	Soil	400	12	400	25
Cast iron sewer piping	Approximately 3,000 LF of cast iron sewer piping containing PCBs < 50 ppm	Pipe/Sediment	N/A	N/A	N/A	15
Concrete foundation wall	Approximately 100 LF (height 10 ft.) of foundation wall located adjacent to PCB contamination outside the building (in the vicinity of the former Chip Chute load-out area)	Concrete	1,000	12	1,000	75
Concrete walls in Chip Chute area	Walls along the east and west sides of the Chip Chute area contaminated with PCBs < 50 ppm	Concrete	400	12	400	30
Intermediate concrete columns in basement	Concrete columns (372 ea) between Rows 9 and 22; each column 1.5 ft x 1.5 ft x 9 ft (average)	Concrete	N/A	N/A	8,300	623
Concrete footer at Column G25	Concrete footer associated with sample CC08 collected during the Field Investigation (PCBs 18.8 ppm)	Concrete	N/A	N/A	68	5
Material inside basement catch basin	Soil and waste inside basement catch basin (5 ft. x 15 ft. x 3 ft.) contaminated with PCBs < 50 ppm	Soil/Waste	75	36	225	14
Concrete flooring - first and second floors	Concrete flooring containing residual PCBs < 50 ppm	Concrete	230,000	9	172,500	12,938

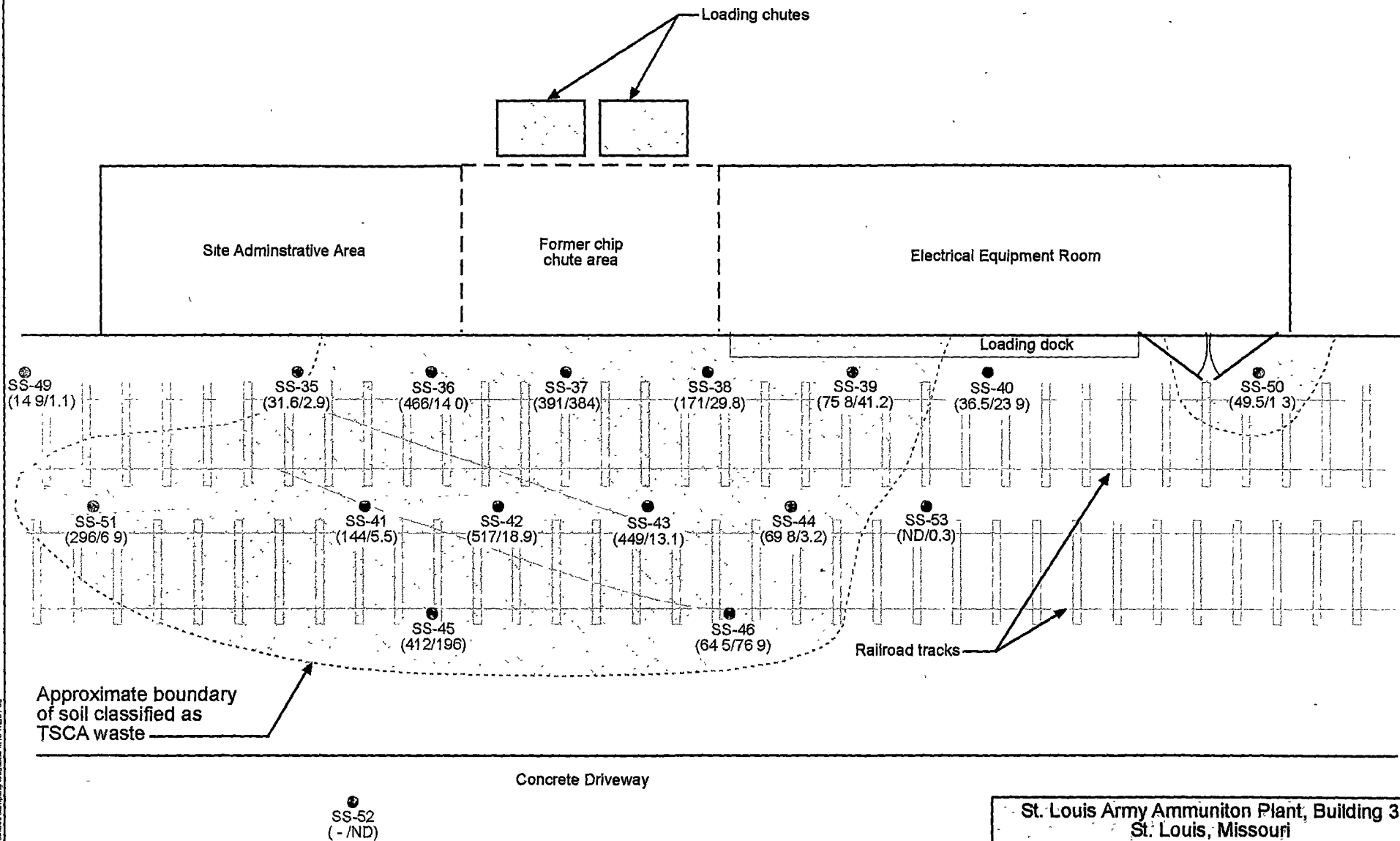
TOTAL

14,043

Table 3-1
Summary of Soil Confirmation Samples

Area/Excavation Description	Est. Area	Est. Perimeter Length	Est. Number of Conf. Samples from Floor	Est. Number of Conf. Samples from Sidewalls
Excavation of TSCA wastes beneath basement concrete flooring between Rows 9 and 20	30,000 ft ²	700 ft.	22	40
Excavation of TSCA wastes outside the building, adjacent to the Chip Chute and former Chip Chute load-out area	2,500 ft ²	200 ft.	5	10
Excavation of TSCA wastes from the Chip Chute area of the basement	400 f ft ²	80 ft.	2	3
Excavations south and west of basement concrete flooring previously remediated to < 50 ppm, but residual contamination remains greater than site cleanup level; including approximately 400 f ft ² of oil-stained soil near Sector K9, identified during Site-Specific EBS	6,400 f ft ²	700 ft.	17	23
Excavation of oil-stained soil near Sector C8 in the basement, identified during the Site-Specific EBS	400 f ft ²	80 ft.	2	4
Excavation of oil-stained area in the basement between Sectors C22 and D22, associated with sample SS30 collected during Field Investigation	800 f ft ²	120 ft.	3	6
Oil-stained area near Sector E28 in the basement, associated with sample SS15 collected during the Field Investigation	400 f ft ²	80 ft.	2	4
Area near Sector E38 referenced in the Phase I EBS (Tetra Tech, 2000)	400 f ft ²	80 ft.	2	4

Figures



Legend

- Sampling location (with sample identification number and PCB concentration [0-6 inches/12-18 inches] in parts per million)

0 10
SCALE IN FEET



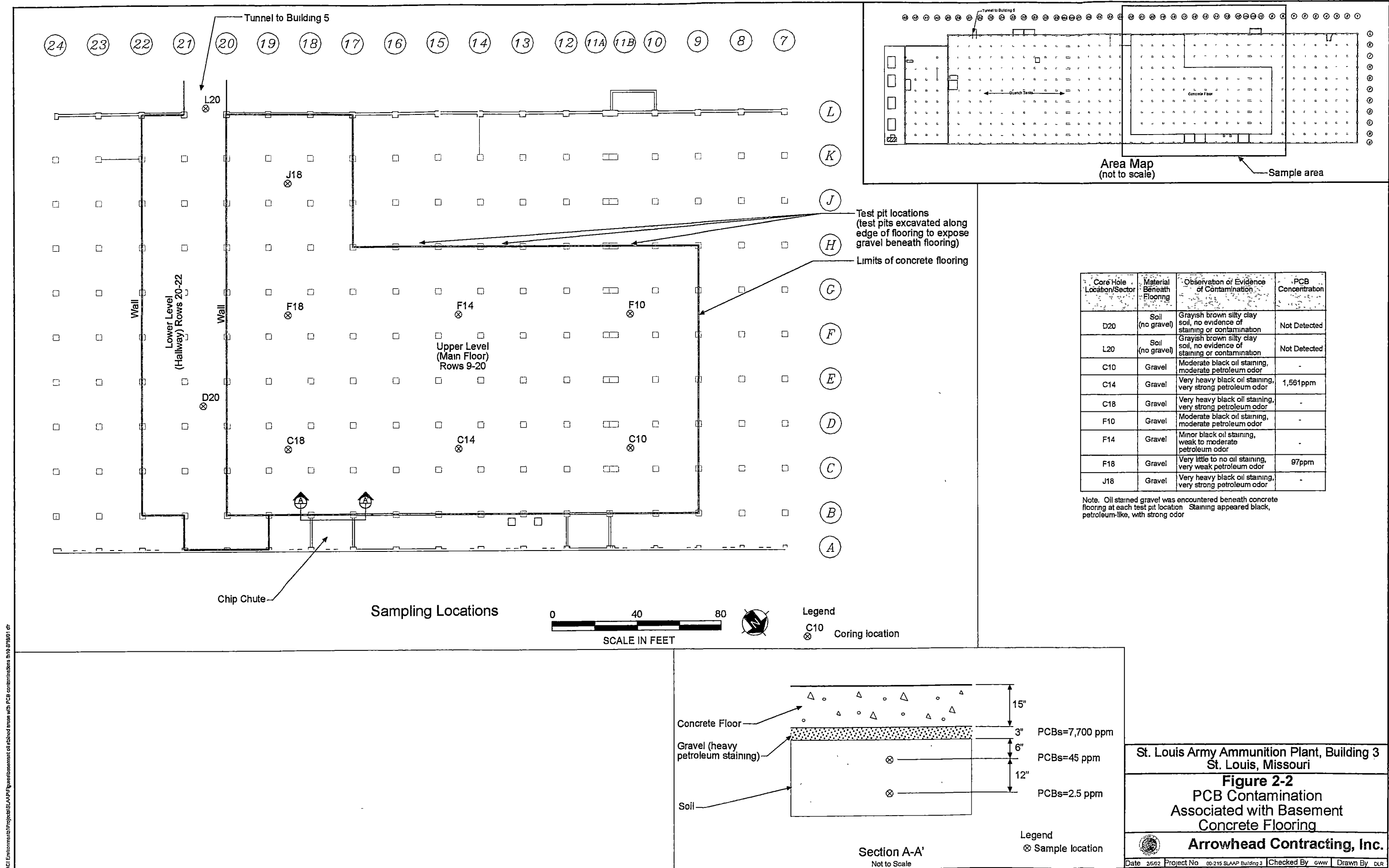
St. Louis Army Ammunition Plant, Building 3
St. Louis, Missouri

Figure 2-1
PCB Contamination
Outside Building 3, Near Chip Chute

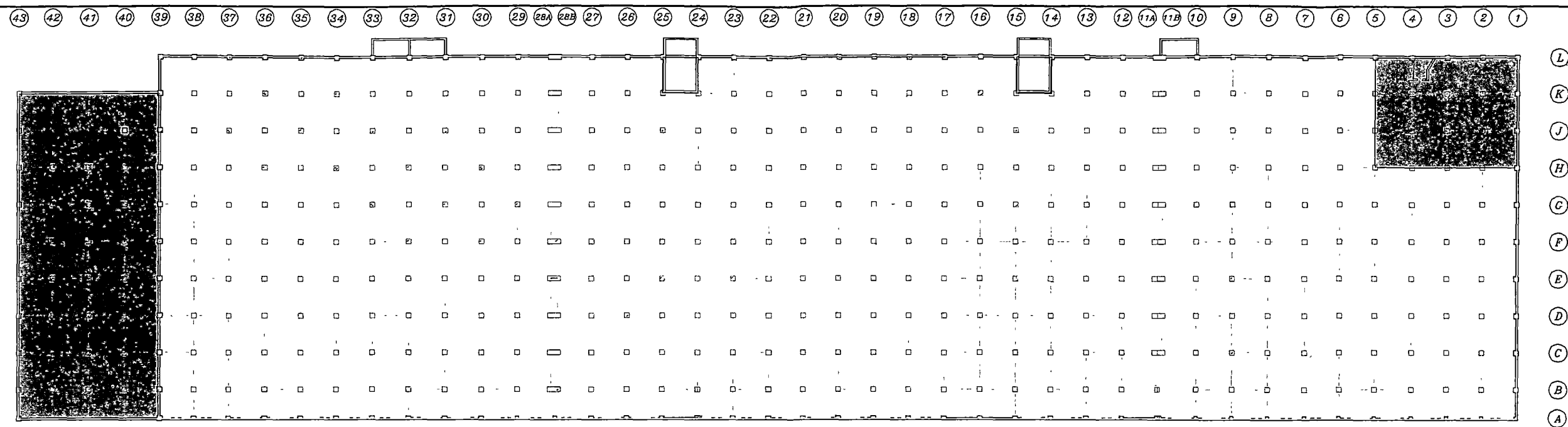


Arrowhead Contracting, Inc.

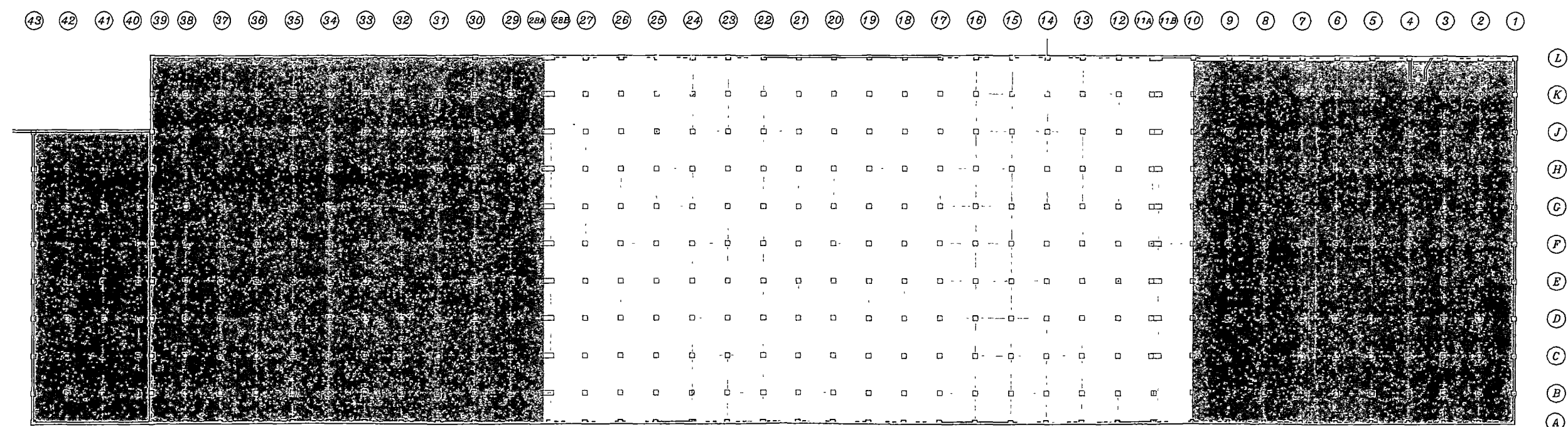
Date: 2/5/02 Project No: 00-215 SLAAP Building 3 Checked By: GBK Drawn By: CLR



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




First Floor



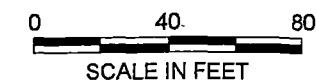
Second Floor

Legend

-  Concrete flooring to be disposed as special PCB waste (<50 ppm).
-  Concrete flooring to be disposed as non-hazardous construction waste
-  Areas removed during initial phase of RA (contained PCB contamination >50 ppm)

Notes:

1. Initial estimate of non-hazardous construction waste (concrete flooring) is 6,000 tons.
2. Initial estimate of special PCB waste is 13,000 tons.



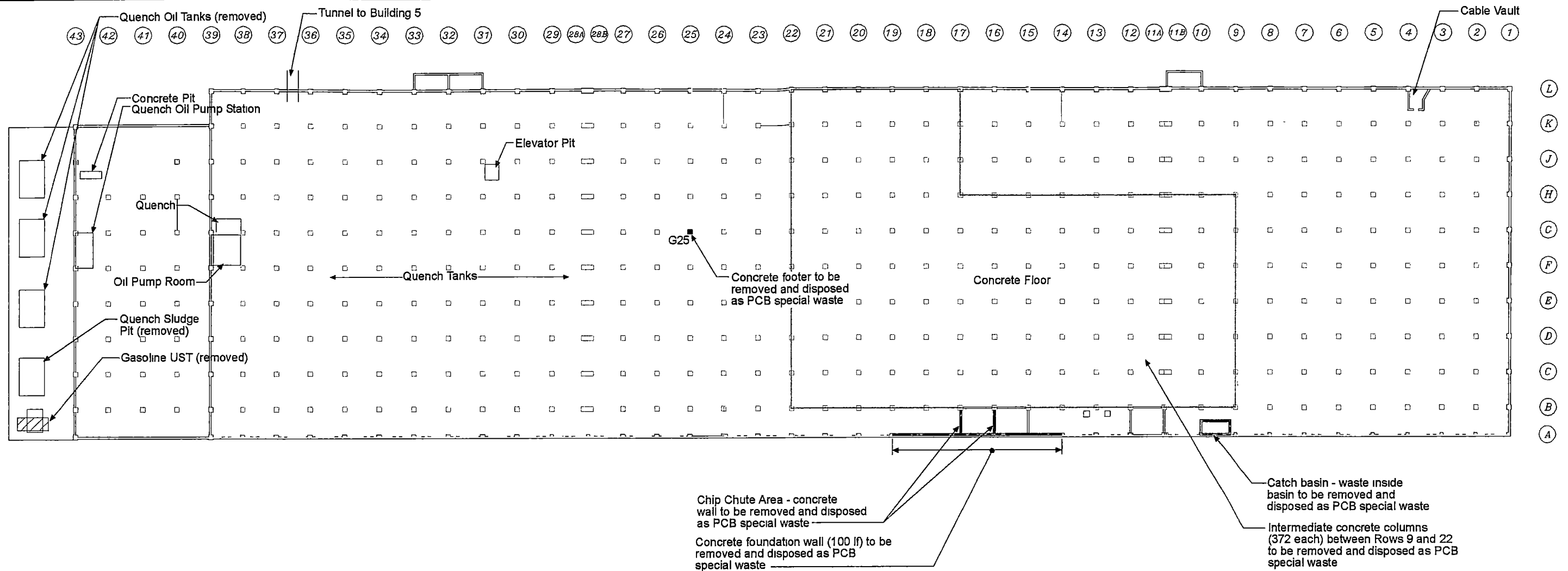
St. Louis Army Ammunition Plant, Building 3
St. Louis, Missouri

Figure 2-3
Areas Identified for the Removal of PCB
Special Wastes - Concrete Flooring
on First and Second Floors



Arrowhead Contracting, Inc.

Date: 2/7/02 Project No: 00-215 SLAAP Building 3 Checked By: GWW Drawn By: DLR



Notes:

1. Initial estimate of PCB special waste associated with intermediate concrete columns (between rows 9 and 22) is 620 tons
2. Initial estimate of PCB special waste associated with concrete foundation wall (100 lf) is 75 tons
3. Initial estimate of PCB special waste associated with concrete walls in Chip Chute area is 30 tons.
4. Initial estimate of PCB special waste associated with concrete footer at column G25 is 5 tons.
5. Initial estimate of PCB special waste associated with waste material inside catch basin is 15 tons.
6. Cast Iron sewer piping (not shown) will also be removed and disposed as PCB special waste. Initial estimate is 3,000 lf (approximately 15 tons).

0 40 80
SCALE IN FEET



St. Louis Army Ammunition Plant, Building 3
St. Louis, Missouri

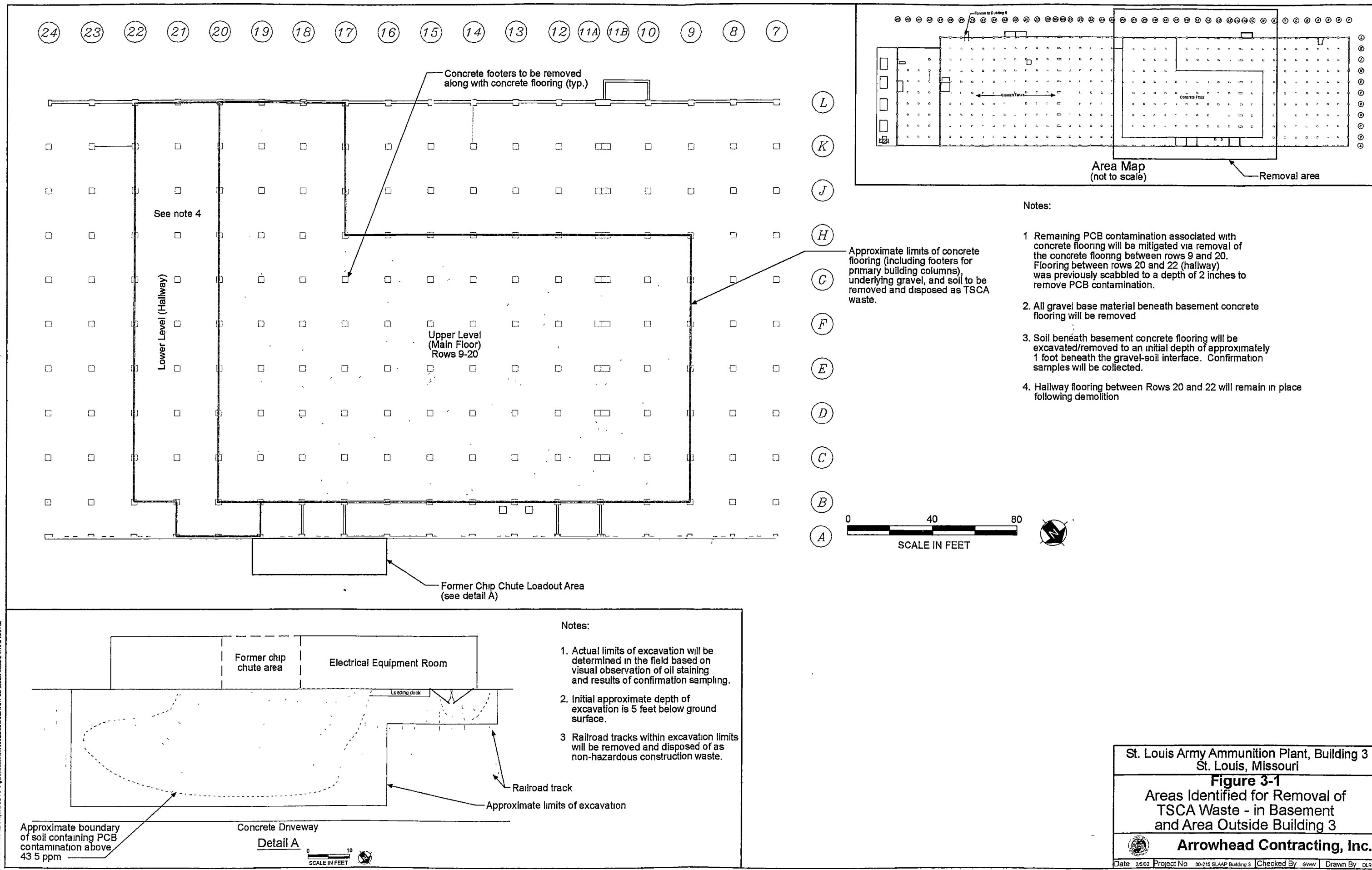
Figure 2-4
Areas Identified for Removal of PCB
Special Wastes - Various Concrete
Features and Piping in Basement

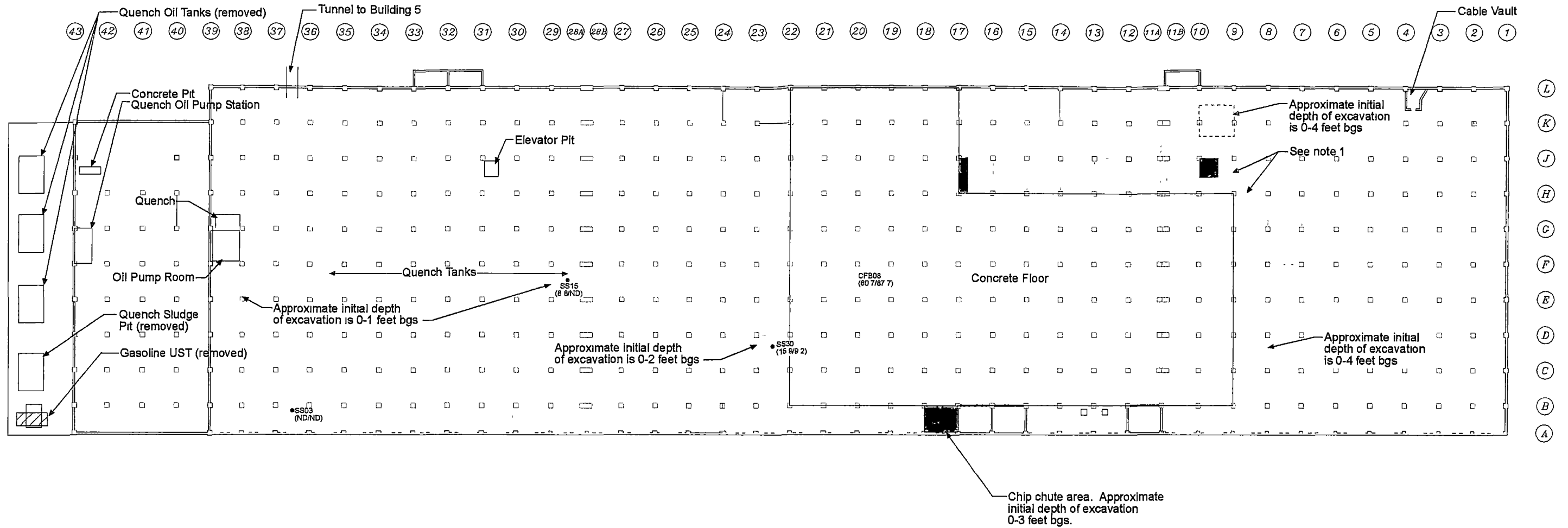


Arrowhead Contracting, Inc.

Date: 8/31/01 Project No: 00-215 SLAAP Building 3 Checked By: gwm Drawn By: DLR

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Note:
Actual limits of all excavations will be determined based on the results of confirmation sampling

0 40 80
SCALE IN FEET



Legend:

- Approximate limits of soil flooring identified for removal of PCB special waste (PCBs >7.6ppm but <50ppm)
- Approximate limits of soil flooring identified for removal of PCB TSCA waste (PCBs >50 ppm).

Note:

- 1 Areas partially excavated during initial phase of RA. Select areas will be excavated further to achieve site cleanup goal (7.6ppm) Initial excavation activities will be guided by results of soil confirmation samples collected during the initial phase of the RA.

St. Louis Army Ammunition Plant, Building 3
St. Louis, Missouri

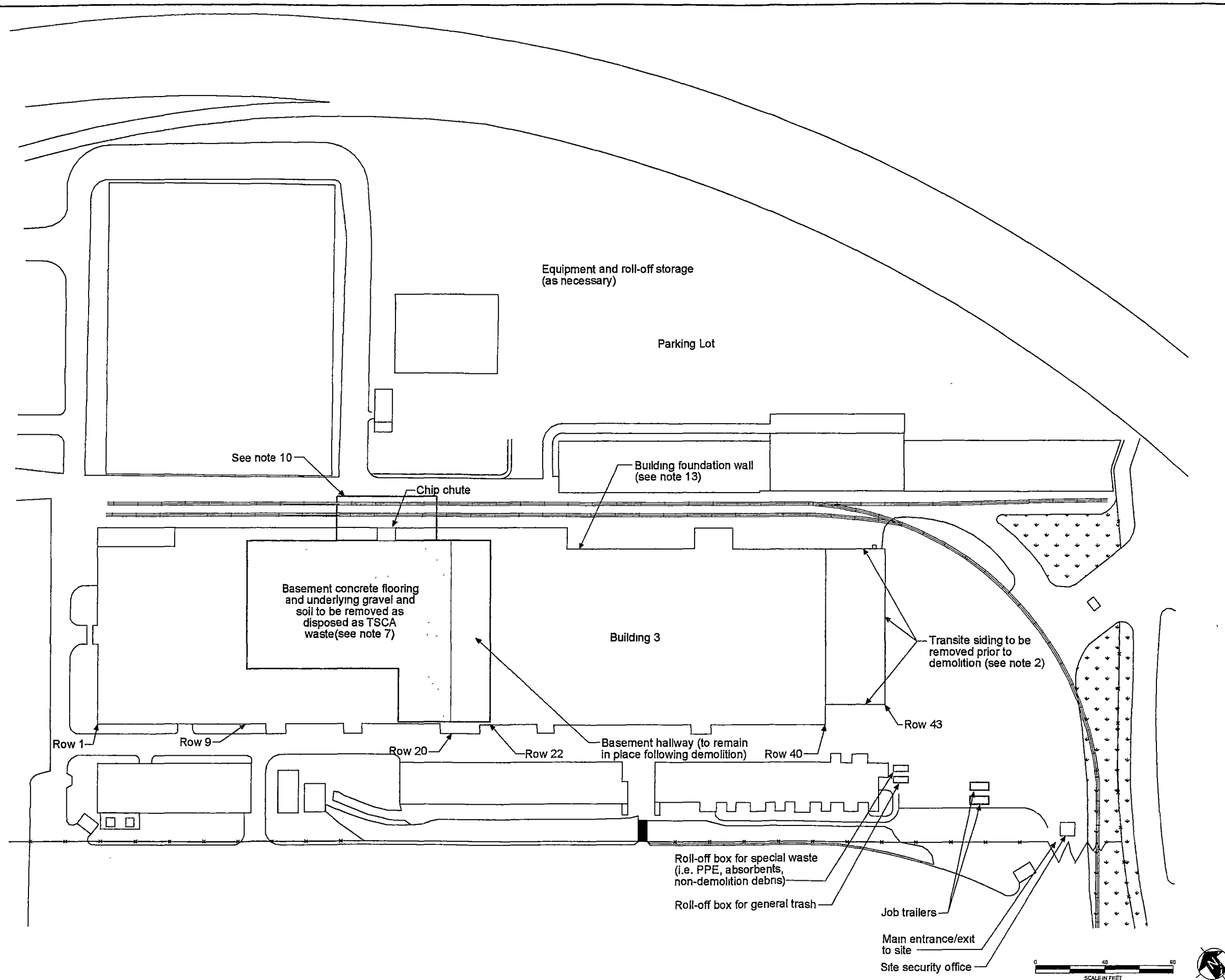
Figure 3-2
Areas Identified for Removal of TSCA
Wastes and PCB Special Wastes -
Soil Flooring in Basement



Arrowhead Contracting, Inc.

Date: 8/5/01 Project No: 00-215 SLAAP Building 3 Checked By: gww Drawn By: DLR

8:40:01 Environmental/Project/SLAAP/SLAAP Admin Area/010 B3001.dwg



Notes:

1. Demolition activities will proceed from west to east. The building will be demolished to the basement floor level or the top of concrete footers (for building columns and foundation wall).
2. In addition to the transite siding shown at the east end of Building 3, transite will also be removed from three catwalks connecting Building 3 with the adjacent buildings and from two areas on the roof. Approximately 15,000 square feet of transite will be removed.
3. Approximately 17,000 linear feet of asbestos piping insulation (primarily in the basement) will be removed prior to demolition.
4. Approximately 5,000 square feet of asbestos floor tile will be removed from the first floor prior to demolition.
5. Demolition shall include removal of three catwalks (not shown). Cinder block walls will be constructed at the entrance to the adjacent buildings from basement tunnels. The tunnels will be removed.
6. Sewer lines will be capped at the point where the lines penetrate the building foundation or basement ground surface.
7. The basement concrete flooring between Rows 9 and 20, the 3-inch gravel layer beneath the flooring, and approximately one foot of soil beneath the gravel layer will be removed and disposed as TSCA waste.
8. The basement will be backfilled with clean clay soil to 85 percent of Modified Proctor.
9. Windows containing ACM window putty will be extracted during demolition and shipped to a certified scrap recycler.
10. Refer to Figure 3-1 for location of soil and other materials outside of Chip Chute that will be removed and disposed as TSCA waste. Refer to Figure 2-4 for location of concrete foundation wall (100 lf) that will be removed and disposed as PCB special waste, this wall will remain in place until soil excavation activities are completed.
11. Refer to Figure 2-3 for areas of concrete flooring that will be disposed as special PCB waste. In addition, 372 concrete columns in the basement and select cast iron sewer lines will be disposed as special waste (Figure 2-4). PCB contaminated sewer lines will also be removed prior to demolition.
12. All fluorescent lights bulbs (FLBs) in the building will be removed and shipped to a certified recycler prior to demolition. FLB ballasts containing PCBs (if found) will be removed and disposed as PCB waste.
13. Building foundation wall, except 100 lf near chip chute (Figure 2-4), will be removed and disposed as non-hazardous construction waste.

St. Louis Army Ammunition Plant, Building 3
St. Louis, Missouri

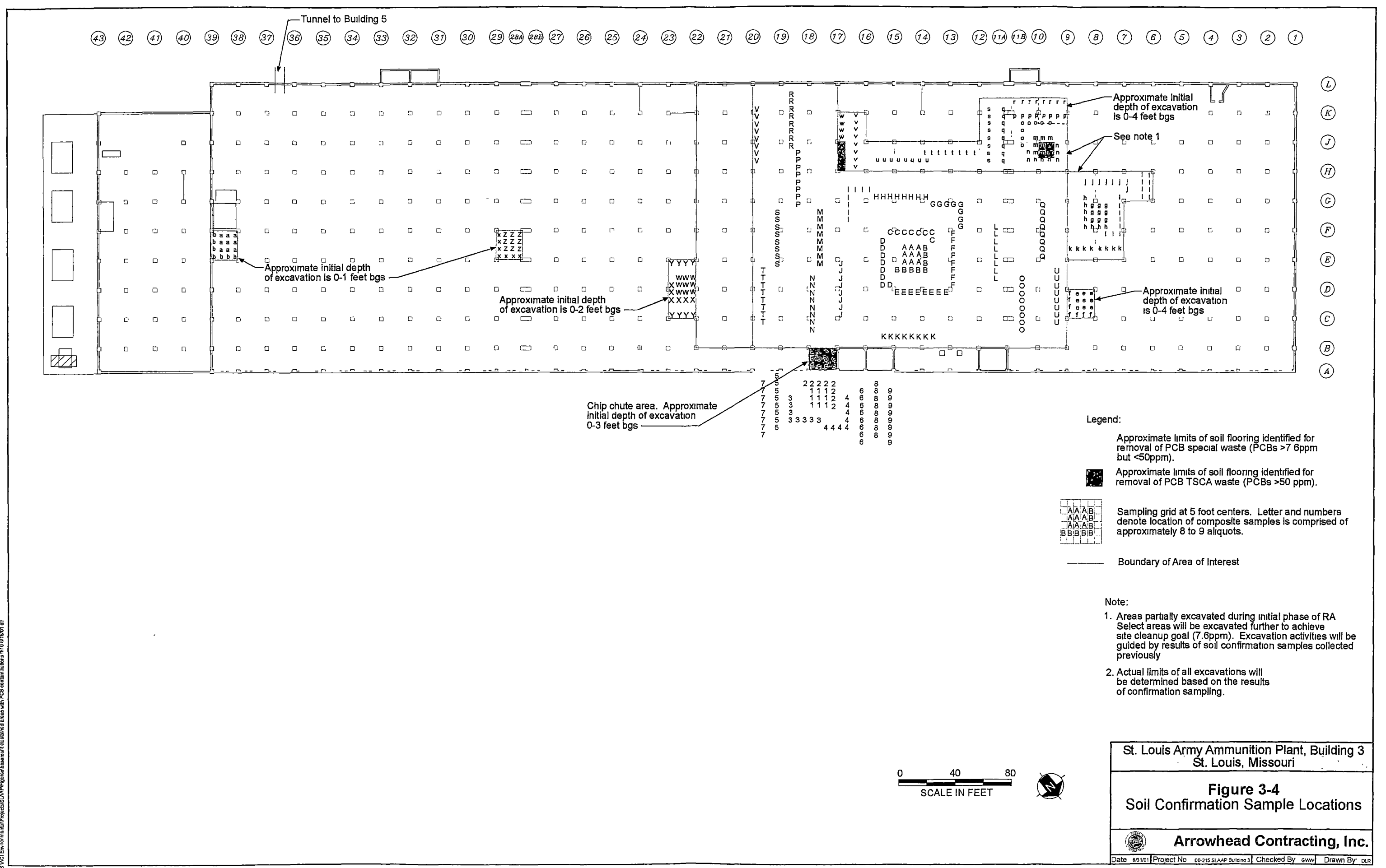
Figure 3-3
General Site Demolition Plan



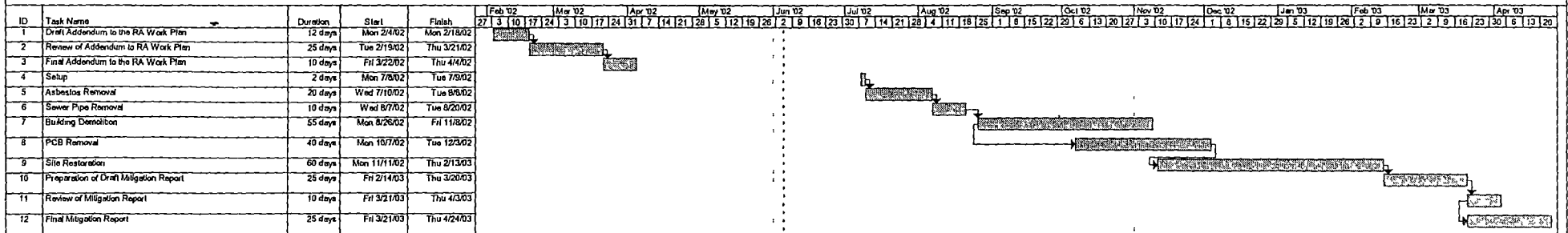
Arrowhead Contracting, Inc.

Date: 2/5/02 Project No: 00-215 SLAAP Building 3 Checked By: gww Drawn By: DLR

S:\ACI Environmental\Projects\SLAAP\Figures\basemap.ctb; build area with PCB contamination (10/01/2001) dr



**Figure 7-1
Project Schedule
Removal Action of TSCA Waste
Saint Louis Army Ammunition Plant (SLAAP)
Saint Louis, Missouri**



Appendix A

***Addendum No. 1 to Safety, Health, and Emergency
Response Plan (SHERP)***

SEPARATOR PAGE

**ADDENDUM NO. 1
SAFETY, HEALTH, AND EMERGENCY RESPONSE PLAN
REMOVAL OF PCB TSCA WASTE
BUILDING 3
ST. LOUIS ARMY AMMUNITION PLANT
ST. LOUIS, MISSOURI
(Revision 1)**

**PRE-PLACED REMEDIAL ACTION CONTRACT
CONTRACT NO. DACW41-00-D0019
TASK ORDER NO. 0002**

Submitted to:

**Department of the Army
U.S. Army Engineer District,
Kansas City Corps of Engineers
700 Federal Building
601 East 12th Street
Kansas City, Missouri 64106**

**Department of the Army
Aviation and Missile Command
Building 3206 Redstone Arsenal
Huntsville, Alabama 35898**

Submitted by:



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June 24, 2002



2074838

Table of Contents

List of Tables	ii
List of Acronyms.....	iii
1.0 Introduction.....	1-1
1.1 Site Description.....	1-2
1.2 Field Activities.....	1-2
2.0 Organization and Responsibilities	2-1
3.0 General Health and Safety Requirements	3-1
4.0 Project Hazard Assessment.....	4-1
5.0 Hazard Control Measures	5-1
5.1 Unplanned Collapses During Demolition	5-1
5.2 Unexpected Release of Hazardous Energy	5-1
5.3 Falling Material.....	5-2
5.4 Excavation Cave-ins	5-3
5.5 Flooding within Excavations	5-3
5.6 Asbestos Exposure During Removal Operations.....	5-3
5.7 Heat Stress	5-4
6.0 Personal Protective Equipment	6-1
7.0 Site Control and Work Zones	7-1
7.1 Restricted Areas	7-1
7.2 Exclusion Zones.....	7-1
7.3 Equipment Decontamination Areas	7-2
8.0 Decontamination	8-1
9.0 Air Monitoring	9-1
10.0 Emergency Response Plan	10-1
11.0 Training Requirements.....	11-1
12.0 Medical Surveillance Requirements	12-1
13.0 Record Keeping and Reporting.....	13-1
14.0 References.....	14-1

List of Tables

Table	Title
4-1	Hazard Descriptions
4-2	Field Activities Hazard Assessment Summary
5-1	Hazard Control Measures Summary
6-1	Levels of Protection and Air Monitoring Parameters

List of Acronyms

ACI	Arrowhead Contracting, Inc.
ACM	asbestos-containing material
AMCOM	U.S. Army Aviation and Missile Command
APR	air-purifying respirator
CENWK	Kansas City District Office of the U.S. Army Corps of Engineers Northwest Division
CFR	Code of Federal Regulation
GFCI	ground-fault circuit interrupter
HAZWOPER	Hazardous Waste Operations and Emergency Response
HEPA	high efficiency particulate air (filter)
MSDS	Material Safety Data Sheet
NESHAP	National Emission Standards for Hazardous Air Pollutants
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PEL	permissible exposure limit
PPE	personal protective equipment
ppm	parts per million
PRAC	pre-placed remedial action contract
RAWP	Removal Action Work Plan
SHERP	Safety, Health, and Emergency Response Plan
SLAAP	St. Louis Army Ammunition Plant
SSHO	Site Safety and Health Officer
USACE	U.S. Army Corps of Engineers

1.0 Introduction

This document constitutes Addendum No. 1 to the Safety, Health, and Emergency Response Plan (SHERP) for field activities associated with the removal of polychlorinated biphenyl (PCB) contaminated materials at Building 3, one of the former production buildings at the Saint Louis Army Ammunition Plant (SLAAP). SLAAP is located at 4800 Goodfellow Boulevard in Saint Louis, Missouri [refer to Figure 1-1 of the Removal Action Work Plan (RAWP)]. This document was prepared on behalf of the U. S. Army Corps of Engineers (USACE), Kansas City District (CENWK) and the U.S. Army Aviation and Missile Command (AMCOM), Huntsville, Alabama by Arrowhead Contracting, Incorporated (ACI) under Pre-Placed Remedial Action Contract (PRAC) number DACW41-00-D0019, Task Order 0002.

This Addendum supplements to the primary SHERP contained in Appendix B of the RAWP. The purpose of this Addendum is to present the health and safety guidelines associated with supplemental field activities for completing the cleanup of PCBs at Building 3. These activities - including removal of additional TSCA wastes, remediation/removal of remaining PCBs to site cleanup standards, asbestos abatement, and building demolition - are described in Addendum No. 1 of the RAWP. This Addendum specifically addresses new or additional information not already covered in the primary SHERP. The health and safety information common to both documents is included in the primary SHERP and not repeated herein. For example, this document does not include information on general site safety, responsibilities, recordkeeping, or medical surveillance, nor does it contain procedures for personnel decontamination, spill cleanup, or air monitoring, because these topics are already discussed in detail in the primary SHERP and require no additional modification. Readers are referred to the primary SHERP for the common health and safety guidelines.

This Addendum to the SHERP is prepared in accordance with standards established by the Occupational Safety and Health Administration (OSHA) in 29 Code of Federal Regulations (CFR) Parts 1910 and 1926, including the Hazardous Waste Operations and Emergency Response (HAZWOPER) standards (29 CFR 1910.120 and 29 CFR 1926.65). This SHERP also incorporates applicable standards contained in the U.S. Army Corps of Engineers (USACE) *Safety and Health Requirements Manual* (1996).

1.1 Site Description

Information regarding the physical layout and history of operations at Building 3 is found in the RAWP (Arrowhead, 2001a) and Addendum No. 1 to the RAWP (Arrowhead, 2002).

1.2 Field Activities

The field activities associated with the supplemental remediation work at SLAAP are described in Addendum No. 1 to the RAWP. These activities include:

- Site preparation and layout
- Asbestos removal
- Sewer piping removal
- Demolition and disposal of the building
- Removal of basement concrete flooring between Rows 9 and 20
- Excavation of TSCA wastes (gravel and soil) beneath basement concrete flooring between Rows 9 and 20
- Removal/excavation of TSCA wastes outside the building near the Chip Chute
- Additional soil excavation to meet site cleanup standards
- Concrete column decontamination
- Excavation backfilling
- Water management
- Material staging and loadout
- Material transportation
- Removal action waste handling
- Confirmation soil sampling

In addition, several activities ancillary to the activities listed above will be performed. These activities include:

- Sample packaging and shipping
- Equipment decontamination
- Equipment maintenance
- Field inspections and air monitoring
- Project administration
- Personnel travel to/from the site

Most of the above field activities (and related hazards) are already addressed in the primary SHERP (Appendix B of the RAWP). The supplemental field activities resulting in additional health and safety requirements as described in this Addendum include: removal of basement concrete flooring and underlying contamination between Rows 9 and 20, removal of materials

outside the building near the Chip Chute, building demolition operations, and excavation backfilling operations.

2.0 Organization and Responsibilities

Table 1-1 of Addendum No. 1 to the RAWP lists the CENWK, Contractor, and subcontractor positions that have responsibility for project implementation. Table 2-1 of the primary SHERP lists the personnel with health and safety responsibilities during the project. These responsibilities are described in detail in Section 2.0 of the SHERP.

3.0 General Health and Safety Requirements

General health and safety requirements are discussed in Section 3.0 of the SHERP, including project safety goals compliance agreements, safety meetings, general safety provisions, fire protection/prevention, housekeeping, mechanical equipment inspections, first aid, sanitation, security, illumination, and communication systems.

Site facilities during the building demolition phase of the project are identified in Figure 3-2 of Addendum No. 1 to the RAWP. The layout of site control (work) zones at the site, including restricted areas, exclusion zones, and decontamination areas, is discussed in Section 7.0.

4.0 Project Hazard Assessment

A hazard assessment is performed to identify the potential safety, health, and environmental hazards associated with specific activities. It is used to determine the control measures necessary for protecting personnel, the community, and the environment. The SSHO performs a hazard assessment for each major field activity expected to be performed during the project (refer to Section 1.2).

The hazards listed in Section 4.0 of the SHERP are also applicable to the supplemental field work outlined in Addendum No. 1 to the RAWP. Additional hazards that will be encountered as a result of supplemental field work activities include:

- Unplanned collapse and other structural hazards
- Unexpected release of hazardous energy
- Falling material
- Cave-ins (excavations)
- Flooding (excavations)
- Asbestos exposure during removal
- Heat stress

Brief descriptions of each of these hazards are presented in Table 4-1 of this Addendum. Table 4-2 presents a list of the primary hazards associated with the additional field activities referenced in Section 1.2. The specific measures that will be implemented to control or minimize these hazards are discussed in detail in Section 5.0.

5.0 Hazard Control Measures

The additional hazards that are anticipated as a result of supplemental field activities are listed in Section 4.0 and Table 4-1 of this Addendum. This section, combined with the remaining sections of this Addendum, address the recommended measures for controlling or minimizing these hazards. The recommended control measures for all other anticipated hazards are discussed in Section 5.0 of the SHERP. A summary of the control measures for all of the hazards anticipated for the supplemental field work is presented in Table 5-1.

5.1 Unplanned Collapses During Demolition

In EM 385-1-1, USACE recognizes unplanned collapses as one of the primary hazards during demolition operations. Collapses occur as a result of structural failure from weakened walls, floors, and load-supporting members. USACE identifies walls that are left free-standing (i.e. without lateral support) as a particularly hazardous situation. Demolition operations will be conducted in accordance with Section 23 of EM 385-1-1. Accordingly, the following control measures will be implemented to protect personnel from unplanned collapses:

- The demolition subcontractor shall provide a competent person, who will be responsible for evaluating the building to structure “to determine the structure layout, the condition of the framing, floors, walls, and the possibility of unplanned collapse of any portion of the structure ...and the existence of other potential or real demolition hazards.” As specified under 23.A.10 of EM 385-1-1, “During demolition, continuing inspections by a competent person shall detect hazards resulting from weakened or deteriorated floors, walls, or loosened material...”
- Shoring, bracing, or other means of support shall be provided where necessary to prevent collapses.
- As specified in 23.C.01, walls greater than 10 ft. in height shall not be permitted to stand without lateral bracing unless approved by the competent person. Unless the wall is constructed and designed to stand without lateral bracing, no wall section shall be allowed to stand without lateral support any longer than necessary for removal of adjacent debris interfering with demolition of the wall.

5.2 Unexpected Release of Hazardous Energy

The demolition of Building 3 will include the removal of all utility lines located within the building limits. These lines include water, gas, steam electrical, sewer, storm drain, and former

process lines. The breaching of these lines during demolition creates a potential for the unexpected release of hazardous energy if these lines are not isolated and evacuated. For example, if a natural gas line has not been shut off upstream of the building, gas could be released once the line is cut or damaged during demolition. It is currently believed that all utility services to Building 3 were previously been disconnected. Notwithstanding, The demolition subcontractor will be responsible for ensuring that utility services to Building 3 are disconnected prior to beginning construction work. In addition, lockout/tagout procedures (referencing 29 CFR 1926.417) are to be implemented prior to demolition activities to preclude the unexpected release of hazardous energy. Utility line control valves will be locked and tagged as necessary, and lines containing product will be evacuated or depressurized. Prior to beginning excavation work, utility companies and/or a locator service (i.e. Missouri One Call) will be contacted to locate and mark underground utility lines.

5.3 *Falling Material*

Falling material is a significant hazard during demolition and excavation operations. Sources of falling material include:

- Debris released during demolition (such as broken glass and fragments of concrete, brick, and steel)
- Debris and soil released from excavators and loaders during excavation and loading operations
- Loose rock, soil, and other materials falling from the excavation wall
- Materials falling into excavations from ground surface

The primary hazard control measure will be safe work practices – maintaining a safe distance from demolition work and the slopes/edges of excavations. Barricades will be erected in accordance with Section 25 of EM 385-1-1 to prevent personnel and equipment from entering excavations and demolition work areas. Inspections will be conducted on a regular basis to evaluate unsafe conditions that could contribute to falling material. Additionally, hard hats will be required at all times during the project. In the event personnel need to work near or within hazardous areas, appropriate guards will be provided. The sidewalls of an excavation may be sloped to minimize the potential for loose rock and soil from falling from the excavation walls. Excavated materials will be placed at least two feet from the edge of deep excavations.

5.4 Excavation Cave-ins

Excavations are susceptible to cave-ins due to the failure of the sidewalls. Cave-ins are caused by factors such as excessive loading at surface (i.e. from heavy equipment), vibration, unstable slopes, and wet soil conditions. Deep (> 5 ft. bgs) excavations during the project will include:

- Building footprint/excavation during demolition
- Excavation adjacent to building near Chip Chute
- Shallow soil excavation in basement

The primary means for controlling the potential for cave-ins will be to slope the sidewalls of the excavation in accordance with OSHA 29 CFR 1926 Subpart P. Barricades (i.e. fencing, warning tape) will also be erected around the perimeter of excavations to prevent access by personnel and equipment. The barricades will be constructed in accordance with Section 25 of EM 385-1-1. During removal of basement concrete flooring and underlying PCB contamination, personnel and equipment will need to work within the building excavation. To the maximum extent possible, work activities will be performed at safe distance from the walls of the building excavation. Barricades will be erected as necessary to keep personnel and equipment from approaching the sidewalls. The building excavation walls may also be sloped in certain areas.

5.5 Flooding within Excavations

Water may accumulate in excavations from rainfall and groundwater infiltration, thereby creating a potential hazard from flooding. To prevent surface water from entering excavations during rain events, dikes, ditches, and/or berms will be constructed. Water pumping systems will be implemented as necessary. Protective systems will be inspected regularly to ensure they are performing as designed. The SSHO will stop work if protective measures do not adequately control water accumulation inside the excavations.

5.6 Asbestos Exposure During Removal Operations

Asbestos-containing materials (ACM) in Building 3 that will be removed prior to demolition include piping insulation in the basement, floor tiles, and transite siding panels. "Gross removal" methods will be used to abate the piping insulation in the basement, which will involve removal of the insulation without wrapping the pipe or using a glove bag. Accordingly, the following safety precautions will be implemented to prevent personnel exposure and emissions to the surrounding area:

- Plastic sheeting (containment barriers) will be placed over critical openings, including windows, floor openings, doorways, and ventilation duct openings.
- Plastic sheeting (drop cloths) will be placed on the floor.
- Negative air machines will be used during abatement to maintain negative pressure near the point of removal.
- Personnel will don full-body asbestos suits and half-face air-purifying respirators (APR) with high-efficiency particulate air (HEPA) filters.
- Decontamination station will be constructed at the entrance/exit to the containment area (basement), and will consist of an equipment room, shower, and clean room. Double-flapped doorways will be located at the entrance/exit to each portion of the decontamination station.
- Personnel will shower upon exiting the containment area.
- ACM will be wetted with amended water during removal.
- ACM will be bagged and sealed upon removal.
- Time-integrated air sampling (refer to Section 9.0) will be conducted to evaluate personnel and area exposures during abatement operations.

Removal of floor tiles classified as ACM may be performed using gross removal methods as specified above. However, if the floor tiles can be removed with minimal breakage, then containment and decontamination procedures will be reduced. Personnel will still be required to don suits and respirators. The tiles will be adequately wetted during removal. Furthermore, transite panels will be wetted during removal. Personnel involved in the removal of transite will don suits and respirators. Overall ACM abatement will be conducted in accordance with 29 CFR 1926.1101 and National Emission Standards for Hazardous Air Pollutants (NESHAP) for asbestos found in 40 CFR 61.140 - 157.

5.7 Heat Stress

Heat stress is a concern for worker safety during the summer months. Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, PPE, workload, and individual characteristics. Heat stress can cause physical discomfort, loss of efficiency, or personal illness/injury. Reduced work tolerance and the increased risk of heat stress are directly influenced by the amount and type of PPE worn. PPE adds weight, bulk, reduces the body's capability for thermoregulation (i.e., evaporation, convection, and radiation), and increases energy expenditure.

If the body's physiological processes fail to maintain a normal body temperature because of excessive heat, a number of physical reactions can occur - ranging from mild to fatal. These physical reactions to excessive heat include:

- Heat rash is caused by continuous exposure to heat and humidity and aggravated by chafing clothes. Heat rash decreases the body's ability to tolerate heat in addition to being a nuisance.
- Heat cramps is caused by profuse perspiration with inadequate electrolytic fluid replacement. Heat cramps cause painful muscle spasms and pain in the extremities and abdomen.
- Heat exhaustion is caused by increased stress on various organs to meet increased demand to cool the body. Heat exhaustion causes shallow breathing; pale, cool, moist skin; profuse sweating; and dizziness.
- Heat stroke is the most severe form of heat stress. Heat stroke symptoms include hot, dry skin; no perspiration; nausea; dizziness; confusion; strong, rapid pulse; coma; and sometimes death. **Heat stroke is a serious medical emergency. The affected person shall be cooled down rapidly and medical attention must be given immediately.**

The following practices will help prevent heat stress:

- Acclimatize workers to hot working conditions.
- Provide plenty of liquids to replace the body fluids lost by perspiration. Fluid intake should be forced because, under conditions of heat stress, the normal thirst mechanism is not adequate to bring about a voluntary replacement of lost fluids.
- Provide personal cooling devices.
- Conduct strenuous field operations in the early morning.
- Rotate personnel to various job duties
- Establish adequate work/rest cycles.

Individuals or coworkers expressing the symptoms of heat stress shall notify the SSHO or Site Supervisor immediately. At the onset of heat related illness, activities must be halted and treatment initiated. Early detection and treatment of heat stress helps to prevent further serious illness or injury. Individuals that have experienced heat related illness can become more sensitive and predisposed to additional heat stress related problems.

Heat exhaustion can be alleviated by having the affected person rest in a cool, shaded location and have them drink cool water. In a heat stroke situation, the body must be cooled immediately to prevent severe injury or death - medical attention must be immediately obtained. To cool down the affected person's body:

- Remove impermeable PPE
- Remove worker from the hot environment.
- Apply copious amounts of cool (not cold) to the body
- Have the person drink cool water, not cold, if conscious.

Adequate work/rest periods shall be implemented as necessary to prevent heat stress on personnel. However, since individuals vary in their susceptibility to heat stress, Arrowhead will also utilize physiological monitoring to aid in measuring each individual's response to heat stress when ambient temperatures exceed 70 °F and impermeable garments are worn. The two physiological parameters that each individual will monitor are:

- **Heart Rate.** Each individual will count his/her radial (wrist) pulse for 30 seconds as early as possible in the first rest period. If the heart rate of any individual exceeds 100 beats per minute at the beginning of the rest period, then the work cycle shall be decreased. The rest period will remain the same.
- **Temperature.** Each individual will measure his/her body temperature with an ear thermometer as early as possible in the first rest period. If the temperature exceeds 99.6 °F at the beginning of the rest period, then the work cycle shall be decreased. The rest period will remain the same.

An individual is not permitted to return to work if his/her body temperature exceeds 100.6 °F.

6.0 Personal Protective Equipment

The levels of personal protective equipment are defined in Section 6.0 of the primary SHERP (Appendix B of the RAWP). A summary of the PPE and respiratory protection requirements for the supplemental field activities described in this Addendum is presented in Table 6-1. PPE requirements may be adjusted (upgraded or downgraded) in the field based on actual field conditions and/or results of monitoring activities (refer to Section 9.0). Respiratory protection will be required during asbestos abatement and concrete column decontamination operations.

7.0 Site Control and Work Zones

The primary purposes of site control are to protect personnel and public from chemical and physical hazards associated with site activities and to prevent the spread of contamination to clean areas. The work areas that pose chemical and physical hazards to personnel will be regarded as regulated or restricted. This section address the site control protocols specific to the supplemental field work described herein. Refer to Section 7.0 of the primary SHERP for other related information, including support zones, emergency exits, and site entry requirements. Personnel and equipment decontamination procedures are discussed in Section 8.0 of the SHERP.

7.1 Restricted Areas

Demolition areas will be considered restricted. Temporary construction fencing, warning tape, or other similar barricades will be installed to prevent access to the restricted areas as necessary. Barricades will also be established around the perimeter of excavations. Personnel will be strictly prohibited from crossing the barricades. Warning signs will also be to identify restricted areas. Access to the SLAAP property will be controlled via the perimeter chain-link fencing and front gate. The front gate will be monitored during construction activities to ensure that personnel and equipment entering the property area are authorized.

7.2 Exclusion Zones

Areas associated with the removal of PCB contamination will be considered exclusion zones. These areas will be segregated from demolition and other site activities to prevent unauthorized entry and to prevent the spread of contamination to clean areas. Temporary construction fencing, warning tape, or other similar barricades will be installed around the exclusion zones (i.e. excavations) for the duration of PCB removal activities. A specific entry/exit (control) point will be established at the perimeter of each exclusion zone to control the access of personnel and equipment. The control point will also serve as a station for personnel decontamination - donning PPE (including boot covers) upon entry and doffing and disposing PPE upon exiting the contaminated area. Once workers don required PPE (refer to Section 6.0) at the control point, they may move freely within the exclusion zone. Upon leaving the exclusion zone, personnel will be required to pass through the control point and doff PPE.

7.3 *Equipment Decontamination Areas*

Heavy equipment will not contact high levels of PCB contamination to a significant extent, because the equipment will generally be positioned at the edge of a contaminated area. Even though equipment may need to enter an excavation as the excavation increases in size, the highest levels of PCB contamination will have previously been removed. Since significant levels of contamination are not anticipated for the tires/tracks and bodies of heavy equipment, decontamination will be conducted within the building footprint. However, the buckets of excavators and loaders will come into contact with materials containing high levels of PCBs during the removal of TSCA wastes. Accordingly, the buckets and arms of equipment will be decontaminated outside the building footprint in a designated area. Rinse and wash water from the decontamination of buckets and arms of equipment will be collected, containerized, and sampled as outlined in Addendum No. 1 to the RAWP.

8.0 Decontamination

Decontamination of equipment and personnel will be performed to limit the migration of contaminants off-site and to support areas. Personnel decontamination will occur at the control point (refer to Section 7.2). Heavy equipment decontamination will be performed within the building excavation or other designated areas (refer to Section 7.3). Additional, temporary decontamination stations may be established as project activities and needs warrant. The procedures for personnel and equipment decontamination are discussed in detail in Section 8.0 of the primary SHERP.

9.0 Air Monitoring

Ambient air monitoring will be conducted by the SSHO or other trained personnel to measure the concentrations of potentially hazardous contaminants. For the supplemental field activities described herein, real-time air monitoring will be conducted for dust during construction operations and combustible gases and oxygen prior to/during cutting torch activities. Time-integrated sampling will be performed by a Missouri-certified air sampler during asbestos abatement activities. The initial air monitoring requirements are presented in Table 6-1. Additional air monitoring (real-time or time-integrated) may be implemented if exposures are suspected. Section 9.0 of the primary SHERP presents the specific protocols for real-time and time-integrated monitoring as well as guidelines for instrument calibration/maintenance and recordkeeping.

10.0 Emergency Response Plan

Specific emergency response protocols are presented in Section 10.0 of the primary SHERP, including procedures for accidents/injuries requiring medical care, fires, explosions, spills and other significant releases hazardous substances, and extreme weather events (such as tornados). Section 10.0 of the SHERP also provides information on emergency contacts, emergency equipment, and emergency follow. Modifications to these procedures for supplemental field activities described in this addendum are as follows:

- **Emergency access/egress from excavations** – In an emergency situation that requires evacuation, personnel working in the building excavation shall exit via the main ramp from the west or via ladders provided. In accordance with OSHA and USACE standards. Means of access to the excavation will be provided to require no more than 25 ft. lateral travel. The ramp will be constructed in accordance with Section 25.B.06 of EM 385-1-1.
- **Severe weather shelter** – If severe weather or a tornado is imminent, the designated shelter area will be the basement of Building 5 or 6. The basement areas can be accessed from stairwells on the north sides of the buildings.

11.0 Training Requirements

Site personnel working in areas containing TSCA waste materials (exclusion zones) will meet the minimum HAZWOPER training requirements as specified in 29 CFR 1926.65 and 29 CFR 1910.120. Since personnel involved in building demolition and backfilling will not be handling or directly contacting TSCA wastes, HAZWOPER training requirements are waived for these operations. Personnel performing demolition and backfilling shall be certified/trained for operation of heavy equipment. All other applicable training requirements, including visitor training, orientation, safety meetings, and Hazard Communication, are discussed in Section 11.0 of the primary SHERP.

12.0 Medical Surveillance Requirements

Medical surveillance requirements for personnel performing work covered under HAZWOPER are discussed in detail in Section 12.0 of the primary SHERP. These requirements also apply to the supplemental field work described in this Addendum.

13.0 Record Keeping and Reporting

Recordkeeping and reporting requirements, including safety logs/forms, safety reports, safety inspections, and accident investigation, are discussed in detail in Section 13.0 of the primary SHERP. These requirements also apply to the supplemental field work described in this Addendum. A copy of all pertinent site S&H forms and logs are provided in Appendix A of the primary SHERP.

14.0 References

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Title 29 Code of Federal Regulations (CFR) Part 1910, *Safety and Health Regulations for General Industry.*

Title 29 Code of Federal Regulations (CFR) Part 1926, *Safety and Health Regulations for Construction.*

U.S. Army Corps of Engineers (USACE), 1996, *Safety & Health Requirements Manual*, EM 385-1-1, 3 September 1996.

U.S. Army Corps of Engineers, 1994, *Safety and Occupational Health Document Requirements for Hazardous, Toxic and Radioactive Waste (HTRW) and Ordnance and Explosive Waste (OWE) Activities*, Appendix B, ER 385-1-92.

Tables

Table 4-1
Hazard Descriptions

Hazard	Description
Unplanned collapse	Collapse of building materials due to structural failure (i.e. weakened floors, walls, or load-supporting members). Free-standing walls are particularly susceptible to collapse.
Unexpected release of hazardous energy	Unexpected release of water, gas, electricity or other energy when a utility line is breached during demolition.
Falling material	<p>Sources of falling material include:</p> <ul style="list-style-type: none"> • Debris released during demolition (such as broken glass and fragments of concrete, brick, and steel) • Debris and soil released from excavators and loaders during excavation and loading operations • Loose rock, soil, and other materials falling from the excavation wall • Materials falling into excavations from ground surface
Cave-ins (excavations)	<p>Failure of the sides of an excavation. Caused by excessive loading at surface, vibration, unstable slopes, water, etc. Open excavations during the project include:</p> <ul style="list-style-type: none"> • Building footprint/excavation during demolition • Excavation adjacent to building near Chip Chute • Shallow soil excavation in basement <p>During removal of basement concrete flooring and underlying PCB contamination, personnel and equipment will work within the building excavation.</p>
Flooding (excavations)	Water accumulating within an excavation during a rain event (or from groundwater infiltration).

Table 4-2
Field Activities Hazard Assessment Summary

Activity	Hazards
Building demolition	<ul style="list-style-type: none"> • Asbestos • Dust and silica • Operational chemicals • Noise • Eye hazards • Slip, trip, falls (general) • Work at heights (fall protection) • Overhead hazards • Hot work (cutting torches) • Operation of small equipment and power tools • Operation of heavy equipment • Crane operations • Hazardous energy • Material handling • Motor vehicle hazards (haul trucks) • Heat and cold stress • Unplanned collapse and other structural hazards • Unexpected release of hazardous energy • Falling material
Removal of basement concrete flooring and underlying contamination; and excavation work in general	<ul style="list-style-type: none"> • PCBs • Dust and silica • Noise • Eye hazards • Slip, trip, falls (general) • Operation of heavy equipment • Motor vehicle hazards (haul trucks) • Hazardous energy (underground utilities) • Heat and cold stress • Falling material • Cave-ins (excavations) • Flooding (excavations)
Backfilling excavations	<ul style="list-style-type: none"> • Dust • Noise • Eye hazards • Slip, trip, falls (general) • Operation of heavy equipment • Motor vehicle hazards (haul trucks) • Heat and cold stress • Falling material • Cave-ins (excavations) • Flooding (excavations)
General	<ul style="list-style-type: none"> • Fires • Environmental hazards (insects, spiders, rodents) • Bloodborne pathogens exposure

Table 5-1
Hazard Control Measures Summary

Hazard	Hazard Control Measure(s)
Exposure to PCBs	<ul style="list-style-type: none"> • PPE • Decontamination procedures • Work zones • Air monitoring • Training
Exposure to operational chemicals	<ul style="list-style-type: none"> • Provision of MSDSs • Chemical labels • PPE • Safe storage • Hazard Communication training
Exposure to asbestos (removal)	<ul style="list-style-type: none"> • Work practices during removal (i.e. negative air, containment, decontamination) • Air monitoring • PPE and respiratory protection • Wet removal methods
Exposure to asbestos (demolition)	<ul style="list-style-type: none"> • Remove ACM prior to demolition • Wet ACM during demolition
Exposure to dust and silica	<ul style="list-style-type: none"> • PPE and respiratory protection (as needed) • Air monitoring • Work practices • Water suppression
Noise	<ul style="list-style-type: none"> • Hearing conservation program • Noise monitoring • Hearing protection
Eye	<ul style="list-style-type: none"> • Eye protection • Eye wash stations
Slips, trips, falls (general)	<ul style="list-style-type: none"> • Housekeeping practices • Work zones • Fall protection – barricades • Training
Work at heights	<ul style="list-style-type: none"> • Fall protection – personal fall arrest • Fall protection – barricades • Work practices • Training
Overhead hazards	<ul style="list-style-type: none"> • Guards • Barricades (beneath hazard area) • Training • Head protection
Fire	<ul style="list-style-type: none"> • Fire extinguishers • Safe storage • Inspections • Hot work provisions • Training
Hot work	<ul style="list-style-type: none"> • Hot work provisions • Inspections • Air monitoring

Hazard	Hazard Control Measure(s)
	<ul style="list-style-type: none"> • Safe handling and storage (cylinders) • Fire extinguishers • PPE
Operation of small equipment and power tools	<ul style="list-style-type: none"> • Safety guards • GFCIs • Inspections • Training
Operation of heavy equipment	<ul style="list-style-type: none"> • Operating practices • Compliance with load capacities • Safety guards and devices • Spotters • Inspections • Preventative maintenance • Seat belts • Training
Material handling	<ul style="list-style-type: none"> • Safe lifting practices • Hand and foot protection • Training
Operation of motor vehicles	<ul style="list-style-type: none"> • Seat belts • Inspections • Hours-of-service limits
Cold stress	<ul style="list-style-type: none"> • Water-impermeable clothing • Space heaters • Training
Heat stress	<ul style="list-style-type: none"> • Provide fluids • Cool areas • Rest periods as necessary
Unplanned collapse	<ul style="list-style-type: none"> • Inspection and oversight (competent person) • Bracing and shoring as necessary • Limit free-standing structures (i.e. walls)
Unexpected release of hazardous energy	<ul style="list-style-type: none"> • Lockout/tagout procedures • Inspections • Locate utilities
Falling material (demolition)	<ul style="list-style-type: none"> • Barricades – prevent access • Head protection • Safe distance from demolition operations • Guards • Inspections
Falling material (excavations)	<ul style="list-style-type: none"> • Barricades – prevent access • Sloping sidewalls • Head protection • Safe positioning of spoil pile • Guards • Inspections
Cave-ins (excavations)	<ul style="list-style-type: none"> • Protective systems (i.e. sloping) • Inspections and oversight (competent person) • Barricades – limit access to open excavation and unstable slopes
Flooding (excavations)	<ul style="list-style-type: none"> • Surface water control (i.e. dikes, ditches) • Pumping systems

Hazard	Hazard Control Measure(s)
Environmental and biological hazards	<ul style="list-style-type: none"> • Minimize or stop work during rain events • Avoid rodent nesting areas • Housekeeping practices • Disinfection (as necessary) • Inspections
Bloodborne pathogens	<ul style="list-style-type: none"> • Universal precautions • PPE • Clean up/disinfection • Training

Table 6-1
Levels of Protection and Air Monitoring Parameters

Field Activity	Level of Protection (PPE)	Special Requirements	Air Monitoring Parameters
Asbestos removal	C	Asbestos suit Half-face APR w/ HEPA filters	Asbestos
Sewer piping removal and hauling	C (initial) Mod. D	Leather gloves Goggles	Combustible gases Dust
Basement concrete floor removal	Mod. D	---	Dust
Building demolition	D	---	Dust Asbestos (possible)
Material staging and loadout	D	---	Dust
Excavation of soil and other PCB-contaminated materials	Mod. D	---	Dust
Column decontamination	C	Chemical-resistant outer gloves Half-face APR w/ OV cartridges	---
Excavation backfilling	D	---	Dust
Truck transportation	N/A	---	---
Confirmation sampling	Mod. D	Chemical-resistant outer gloves	---
Water management	D or Mod. D	Water resistant clothing	---
Equipment decontamination	D or Mod. D	---	Dust

** C (initial) – includes APR, may be downgraded to Modified D as approved by SSHO.

Appendix B
Specifications

SECTION 02220

DEMOLITION

PART 1 - GENERAL

1.1 Description

This guide specification covers the requirements for demolition and removal of resulting debris.

1.2 General Requirements

The work includes demolition, salvage of identified items and materials, and removal of resulting rubbish and debris. Rubbish and debris shall be removed from Government property daily, unless otherwise directed, to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas specified by the Contracting Officer. In the interest of occupational safety and health, the work shall be performed in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections. In the interest of conservation, salvage shall be pursued to the maximum extent possible; salvaged items and materials shall be disposed of as specified.

1.3 Definitions

1.3.1 Special Wastes

As used herein, materials containing polychlorinated biphenyls (PCBs) at a concentration less than 50 parts per million (ppm).

1.3.2 Asbestos-Containing Materials (ACM)

Materials containing asbestos at a concentration greater than 1%.

1.4 References

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. Reference is made to the latest revised edition of each publication referenced.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety and Health
Requirements Manual

1.5 Submittals

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following information:

1.5.1 Preconstruction Submittals

The following shall be submitted prior to commencing demolition/construction activities:

- Certificates of insurance
- Performance bond
- List of proposed subcontractors
- Demolition permit(s), G
- Copies of required notifications
- List of receiving facilities (landfills, recyclers) for demolition debris, including special wastes and materials removed from building prior to demolition; G

1.5.2 SD-03 Product Data

Work Plan; G

The procedures proposed for the accomplishment of the work. The procedures shall provide for safe conduct of the work, including procedures and methods to provide necessary supports, lateral bracing and shoring when required, careful removal and disposition of materials specified to be salvaged, protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations in accordance with EM 385-1-1.

1.5.3 SD-07 Certificates

Landfill Special Waste Permit; G

Provide copy of permit (issued by State or Federal agencies) verifying that landfill selected for disposal of special waste is authorized to accept PCBs less than 50 ppm.

1.6 DUST CONTROL

The amount of dust resulting from demolition shall be controlled to prevent the creation of a nuisance in the surrounding area. Use of water will not be permitted when it will result in, or create, hazardous or objectionable conditions such as ice, flooding and pollution

1.7 PROTECTION

1.7.1 Protection of Personnel

During the demolition work the Contractor shall continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the demolition site. No area, section, or component of floors, roofs, walls, columns, pilasters, or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.7.2 Protection of Structures

Floors, roofs, walls, columns, pilasters, and other structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, shall remain standing without additional bracing, shoring, or lateral support until demolished, unless directed otherwise by the Contracting Officer. The Contractor shall ensure that no elements determined to be unstable are left unsupported and shall be responsible for placing and securing bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, or demolition work performed under this contract. Note: Contractor shall provide a "competent person" to perform structural engineering evaluations as outlined in Section 23.A.01 and 23.A.10 of EM 385-1-1.

1.7.3 Protection of Existing Property

Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The Contractor shall take necessary precautions to avoid damage to existing buildings and items to remain in place or to remain the property of the Government; any damaged buildings or items shall be repaired or replaced as directed by the Contracting Officer. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under this contract

1.7.4 Environmental Protection

Contractor shall wet window putty material (classified as ACM) when disturbed during demolition operations.

1.7.5 Protection From the Weather

The interior of buildings to remain; salvageable materials and equipment shall be protected from the weather at all times.

1.8 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

1.9 USE OF EXPLOSIVES

Use of explosives will not be permitted.

PART 2 – PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXISTING STRUCTURES

BUILDING NO. 3 shall be removed to basement floor level; foundation and building columns shall be removed to top of footers. Remove three catwalks connecting Building No. 3 with adjacent buildings. Remove transformer stations outside the building if necessary to execute the work. Do not remove basement concrete flooring located between Rows 9 and 22 and concrete foundation walls on the north side of the building from Rows 14 to 19. Note: Demolition operations shall begin at the west of the building and proceed eastward.

Remove the following prior to commencing demolition activities: fluorescent light bulbs (FLBs), fluorescent light ballasts containing PCBs, and other materials requiring special disposal as identified during building survey (refer to Section 1.6.3). Dispose or recycle materials in accordance with State and Federal regulations. Note: ACM and cast iron sewer piping will be removed by others prior to commencing demolition activities.

3.2 UTILITIES

Locate utilities serving Building No. 3 in accordance with Section 23.A.02 of EM 385-11. Disconnect all utility services to building. Provide lockout/tagout as necessary to prevent the unexpected release of hazardous energy upon

breaching utility lines during demolition. Remove utilities within building up to point where utilities enter/exit building foundation or basement ground surface; cap sewer lines, water lines, and storm drains at this point.

3.3 FILLING

Construct walls at entrance to Building No. 3 from underground tunnels; construct walls with cinder block or brick.

3.4 DISPOSITION OF MATERIAL

Title to material and equipment to be demolished, except Government salvage items, is vested in the Contractor upon receipt of notice to proceed. The Government will not be responsible for the condition, loss or damage to such property after notice to proceed.

3.4.1 Salvageable Items and Material

Contractor shall salvage and recycle items and material to the maximum extent possible.

3.4.1.1 Material Salvaged for the Contractor

Material salvaged for the Contractor shall be stored as approved by the Contracting Officer and shall be removed from Government property before completion of the contract. Material salvaged for the Contractor shall not be sold on the site.

3.4.1.2 Items Salvaged for the Government

Salvaged items to remain the property of the Government shall be removed in a manner to prevent damage, and packed or crated to protect the items from damage while in storage or during shipment. Items damaged during removal or storage shall be repaired or replaced to match existing items. Containers shall be properly identified as to contents. The following items reserved as property of the Government shall be delivered to areas designated by the Contracting Officer:

- Switchgear
- Transformers adjacent to building
- Other items designated by Contracting Officer

3.4.1 Unsalvageable Material

Concrete, masonry, steel, and other noncombustible materials, except concrete permitted to remain in place, shall be disposed of or recycled in facilities approved by local, State, and/or Federal agencies. Concrete flooring and

columns designated as special waste (potentially containing PCBs less than 50 ppm) shall be disposed of in a municipal landfill approved by State or Federal agencies to accept PCBs.

3.5 CLEAN UP

Debris and rubbish shall be removed from basement. Debris shall be removed and transported in a manner that prevents spillage on streets or adjacent areas. Local regulations regarding hauling and disposal shall apply.

3.6 PAVEMENTS

Remove pavements only as necessary to execute the work. Removal of pavement shall be approved by Contracting Officer.

END OF SECTION

SECTION 02315
EXCAVATION AND FILL

Note: This specification covers backfill placement only. Therefore, references to excavation are not included.

PART 1 - GENERAL

1.1 Description

This section specifies requirements for fill materials and for placement, compaction, and testing of fill.

1.2 References

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. Reference is made to the latest revised edition of each publication referenced.

American Society for Testing and Materials

ASTM D 422	Standard Test Method for Particle-Size Analysis of Soils
ASTM D 698	Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using Standard Effort (12,400 ft-lbf/ft ³)
ASTM D 1556	Density of Soil In Place by the Sand-Cone Method
ASTM D 2216	Laboratory Determination of Water Content of Soil, Rock, and Soil-Aggregate Mixtures
ASTM D 2487	Classification of Soils for Engineering Purposes
ASTM D 4253	Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
ASTM D 4254	Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
ASTM D 4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soil

Missouri Department of Natural Resources

Pub. 468B	Cleanup Levels for Missouri (CALM)
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1.3 Submittals

Submit the following information:

1.3.1 SD-09 Reports

Submit the proposed source of backfill and the following test results:

a.) Geotechnical:

- Grain-size analysis (ASTM D422)
- Atterberg Limits (ASTM D4318), for cohesive material only
- Moisture Content (ASTM D2216)
- Moisture-Density Relations of Soils (ASTM D698)
- Field Density (ASTM D1556)
- Maximum Density and Unit Weight using Vibratory Table (if ASTM D4253 is used for granular materials)
- Minimum Density and Unit Weight and Calculations of Density (if ASTM D4254 is used for granular materials)

b.) Chemical test results for analyses listed below in Section 2.1.1

PART 2 – PRODUCTS

2.1 Materials

The Contractor shall furnish fill materials as described in the following sections.

2.1.1 Offsite Backfill (Soil)

Clean offsite backfill shall be used for the backfill of building excavation from top of concrete footers to surface, and for total depth of excavation outside the building footprint. The offsite backfill material shall be free from ice, snow, and/or vegetative or organic matter, such as peat, organic silt, sod, or other materials considered deleterious. The maximum size of the clean fill shall be 4 in. in diameter. The offsite backfill shall consist of cohesive or cohesionless material generally classified according to Unified Soil Classification System as GW, GP, SW, SP, GC, SM, SC, CH, and CL.

Soils brought in from off site for use as backfill shall be tested for the following:

- Polychlorinated biphenyls (PCBs)
- Total petroleum hydrocarbons (TPH):
- Sum of benzene, toluene, ethyl benzene, and xylene (BTEX)

- Total Metals
- Total Semi-volatile Organic Compounds (SVOCs)
- Toxicity Characteristic Leaching Procedure (TCLP) - Metals
- TCLP - SVOCs

Backfill shall contain less than 0.5 parts per million (ppm) of PCBs, less than 100 ppm of TPH, less than 10 ppm of BTEX, less than the Tier 1 Soil Target Concentrations (STARC) for Scenario B (commercial land use) as specified in Cleanup Levels for Missouri (CALM) (current revision), and shall not fail the TCLP test. TPH concentrations shall be determined using EPA 600/4-79/20 Method 418.1. BTEX concentrations shall be determined using EPA SW-846 Method 5030/8020. Total Metals concentrations shall be determined using EPA SW-946 Method 6010B and 7470A (mercury). Total SVOCs concentrations shall be determined using EPA SW-846 Method 8270. PCB concentrations shall be determined using EPA SW-846 Method 8082. TCLP shall be performed in accordance with EPA SW-846 Method 1311. Provide borrow site testing for analytes listed above from a composite sample of material from the borrow site, with at least one test from each borrow site. Material shall not be brought on site until tests have been approved by the Contracting Officer.

Each sample of the offsite backfill shall also be tested for the following:

- ASTM D698, Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using Standard Effort (12,400 ft-lb/ft)
- ASTM D2216, Laboratory Determination of Water Content of Soil, Rock, and Soil-Aggregate Mixtures
- ASTM D2487, Classification of Soils for Engineering Purposes (Unified Classification System)
- ASTM D4318, Liquid Limit, Plastic Limit, and Plasticity Index of Soils

2.1.2 Offsite Backfill (Crushed Aggregate)

Crushed aggregate material shall be used for backfill of the building excavation from base of excavation to top of concrete footers. Submit results of analytical testing listed in Section 2.1.1. The crushed aggregate shall consist of sound, durable rock, free from clay lumps and materials considered deleterious. The percentage of deleterious substances (by weight) shall not exceed the following.

Deleterious rock	4%
Shale	0.5%
Other foreign material	0.5%
Clay lumps	0.5%

The crushed aggregate shall be Type 1 aggregate, meeting the following gradation requirements:

<u>Size</u>	<u>Percent Passing by Weight</u>
1-in.	100
1/2-in.	60-90
No.4	40-60
No.40	15-35

Additionally, provide sample test results for the following:

- ASTM D2216, Laboratory Determination of Water Content of Soil, Rock, and Soil-Aggregate Mixtures
- ASTM D698, Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using Standard Effort (12,400 ft-lbf/ft³)

At the discretion of the Site Engineer, the following density tests may be used in lieu of ASTM D698.

- ASTM D4253, Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
- ASTM D4254, Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density

PART 3 - EXECUTION

3.1 General

Identify lines, levels, contours, and datum required to perform the work. Reestablish lines, levels, and grades if disturbed during site work. Prior to placing offsite backfill, the final excavated surface shall be sampled for PCBs and shall be confirmed to meet the stated remediation criteria as presented in Addendum No. 1 to Removal Action Work Plan (RAWP). Fill and backfill to contours and elevations to match existing topography.

3.2 Backfill Placement

The Contracting Officer's Representative must approve the excavation as final before the Contractor is allowed to place backfill material in the excavation. Backfilling shall begin immediately upon written approval by the Contracting Officer's Representative. The backfill material shall be placed in uniform lifts not greater than 12 inches. Each lift shall be compacted using a suitable compactor. A minimum of four passes shall be used, or as necessary to achieve 95% of the Standard Proctor (ASTM D 698) compaction value. Backfill placed in excavation shall be compacted to a minimum of 95% of the maximum dry density based on

the Standard Proctor test (ASTM D 698). The moisture of the backfill shall not vary more than 3% from optimum. Areas not accessible to rollers shall be compacted with smaller equipment ("whackers" or "jumping jacks"). Mechanical hand tampers shall be used where available compaction equipment will not fit. Where required, the Contractor shall add sufficient water during the compaction effort to ensure proper density. If, due to rain or other causes, the material contains moisture too excessive for satisfactory compaction, it shall be allowed to dry, assisted by mixing, if necessary, before the compaction or filling effort is resumed.

Crushed aggregate backfill shall be placed in building excavation from base of excavation to top of concrete footers. Material shall be traffic-compacted using dozer or other equivalent equipment.

Finish grades to match existing topography. Grade areas to avoid ponding of water and drain water away from structures.

3.3 Field Quality Control

As a minimum, the following testing shall be performed and reported for the offsite backfill material. If the source of borrow material changes, an additional set of tests shall be performed. A minimum of one test shall be performed unless otherwise noted.

<u>Test</u>	<u>Frequency (one test per)</u>
The following laboratory tests shall be performed	
Grain Size (ASTM D 422) (cohesionless soils only)	1,000 yd ³
Liquid and Plastic Limits (ASTM D 4318) – (required for cohesive soil only)	1,000 yd ³
Moisture Content (ASTM D 2216) – (required for cohesive soil only)	1,000 yd ³
Moisture-Density Relations (ASTM D 698) – (where specified)	1,000 yd ³

<u>Test</u>	<u>Frequency (one test per)</u>
The following in-place test shall be performed	

Sand Cone Method (ASTM D 1556) or approved
equal, and Moisture Content (ASTM D 2216)

lift
(above footers)

END OF SECTION

Appendix C

Risk-Based Determination of PCB Cleanup Levels

Appendix C

Risk-Based Determination of PCB Cleanup Goals

MEMORANDUM

To: Greg Wallace
Arrowhead Contracting, Inc.
12920 Metcalf, Suite 150
Overland Park, KS 66213

From: Jim Garrison, PhD
URS Corporation

Date: February 14, 2002

Re: Calculation of PCB Cleanup Goals
For Subsurface Soils Beneath Building 3
St Louis Army Ammunition Plant (SLAAP)

This memorandum presents the documentation for developing subsurface soil cleanup goals for PCBs that have been discovered beneath Building 3 at the SLAAP site. It is our understanding that extensive PCB contamination has been discovered beneath the basement floor of this building. We understand that once this building is demolished and any contaminated soils are removed, the basement footprint will be backfilled leaving any residual contamination in the subsurface soils at least 8 to 10 feet below ground surface. In order to complete demolition of the building and prepare that portion of the site for property transfer, cleanup goals must be developed for the underlying soils. At this time there are no standardized subsurface cleanup goals that can be readily applied to deep soils. For this reason, consistent with TSCA guidance, health-based cleanup goals have been developed herein.

Because of the depth of the PCB contamination (8-10 feet bgs and deeper), the only anticipated exposure to contaminated soil would be if construction workers were to excavate to that depth during future development of the property. The cleanup goals presented in this document were thus developed to be protective of a general construction worker population. The equations used to calculate cleanup goals, and the exposure assumptions use in these equations were taken from the *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* (USEPA, 2001). The assumptions provided in this guidance were specifically designed to evaluate construction worker exposure, particularly the high soil contact rates associated with construction work. It should be noted that these equations assume significant exposure by two pathways: direct dermal contact and incidental ingestion. An evaluation of the inhalation pathway, based on the assumption of dust generation from heavy truck traffic, was performed using the Particulate Emission Factor equations presented in USEPA (2001). Inhalation was not identified as a significant pathway to overall risk, and as such, was not incorporated into the cleanup goal equations.

The equations and exposure assumptions used in the calculations are presented in Tables 1 and 2. Table 1 presents the calculation of health-based cleanup goals based on the

potential carcinogenic effects of PCBs. The slope factor used in these calculations, based on total PCB, was taken from USEPA's Integrated Risk Information System (IRIS) database. Alternative goals were calculated based on three different target risk levels; 1×10^{-6} , 1×10^{-5} , and 1×10^{-4} . Under industrial use scenarios, a 10^{-5} cleanup goal is generally considered protective, and is often used as the recommended cancer-based cleanup goal. Table 2 presents the calculation of health-based cleanup goals based on the non-cancer effects of PCBs. A reference dose (RfD) of 4.5×10^{-5} was used to evaluate non-cancer effects. This value was derived as the mean of the RfD for aroclor 1254 (RfD of 2×10^{-5}) and aroclor 1016 (RfD of 7×10^{-5}). This value was chosen because there is no RfD for the form of aroclor present at the site (aroclor 1248), and because this form of aroclor roughly falls between 1254 and 1016 in the degree of chlorination¹. Alternative goals were calculated based on two different target hazard quotients; 0.1 and 1.0. Under most circumstances, the target hazard index of 1.0 is used as the basis for the non-cancer-based cleanup goal. A comparison of the alternative cleanup goals is presented in Table 3. A cleanup goal of 10 mg/kg, based on a target hazard index of 1.0, would also correlate with a target cancer risk less than 1×10^{-5} for construction worker exposure.

This memorandum was prepared for Arrowhead Contracting for the specific purpose of developing subsurface soil cleanup goals for soils underlying the basement of Building 3 at SLAAP under the assumptions identified above. Should site conditions vary from these assumptions, these cleanup goals should be revisited to insure they are adequately protective.

Reference

U.S. Environmental Protection Agency (USEPA). 2001. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Peer review Draft. OSWER Directive 9355.4-24. March.

¹ Aroclors consist of mixtures of individual PCB congeners with varying degrees of chlorination. Aroclor 1248 has a lower percentage of overall chlorination than aroclor 1254, but more than aroclor 1016. It is believed that the degree of toxicity is related to the degree of chlorination.

Table 1

Calculation of subsurface soil PCB cleanup goal based on construction worker scenario
 Building 3 - St Louis Army Ammunition Plant (SLAAP)
 Cancer endpoint

Equation:

$$Goal_c = \frac{TR * BW * ATc}{(EF * ED * CF) * ((SF * IR) + (SF * AF * ABS * SA))}$$

Where: TR = Target Risk (unitless)
 BW = Body Weight (kg)
 ATc = Averaging Time for Carcinogens (days)
 EF = Exposure frequency (days/year)
 ED = Exposure Duration (years)
 CF = Conversion Factor (kg/mg)
 SF = Slope Factor (mg/kg-day)⁻¹
 IR = Ingestion Rate (mg/day)
 AF = Soil to Skin Adherence Factor (mg/cm²)
 ABS = Dermal Absorption fraction (unitless)
 SA = Exposed Skin Surface Area (cm²/day)

TR	BW	ATc	EF	ED	CF	SF	IR	AF	ABS	SA	Goal _c
unitless	kg	days	days/yr	years	kg/mg	(mg/kg-d) ⁻¹	mg/day	mg/cm ²	unitless	cm ² /day	mg/kg
1.00E-04	70	25550	250	1	0.000001	2	330	0.3	0.14	3300	763.3
1.00E-05	70	25550	250	1	0.000001	2	330	0.3	0.14	3300	76.3
1.00E-06	70	25550	250	1	1.00E-06	2	330	0.3	0.14	3300	7.6

note: Exposure assumptions and equations from Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (EPA, 2001).

Table 2

Calculation of subsurface soil PCB cleanup goal based on construction worker scenario
 Building 3 - St Louis Army Ammunition Plant (SLAAP)
 Non-Cancer endpoint

Equation:

$$Goal_{nc} = \frac{THQ * BW * ATnc}{(EF * ED * CF) * ((1/RfD * IR) + (1/RfD * AF * ABS * SA))}$$

Where: THQ = Target Hazard Quotient (unitless)
 BW = Body Weight (kg)
 ATnc = Averaging Time for Non-Carcinogens (days)
 EF = Exposure frequency (days/year)
 ED = Exposure Duration (years)
 CF = Conversion Factor (kg/mg)
 RfD = Reference Dose (mg/kg-day)
 IR = Ingestion Rate (mg/day)
 AF = Soil to Skin Adherence Factor (mg/cm²)
 ABS = Dermal Absorption fraction (unitless)
 SA = Exposed Skin Surface Area (cm²/day)

THQ	BW	ATnc	EF	ED	CF	RfD	IR	AF	ABS	SA	Goal _{nc}
unitless	kg	days	days/yr	years	kg/mg	mg/kg-d	mg/day	mg/cm ²	unitless	cm ² /day	mg/kg
1	70	365	250	1	1.00E-06	4.50E-05	330	0.3	0.14	3300	10

note: Exposure assumptions and equations from Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (EPA, 2001).

Table 3

Calculation of subsurface soil PCB cleanup goal based on construction worker scenario
Building 3 - St Louis Army Ammunition Plant (SLAAP)

All concentrations given in mg/kg

Target Risk Level			Target Hazard		Recommended Value
1.00E-06	1.00E-05	1.00E-04	1	0.1	Based on CR<1E-5 and HI = 1.0
8	76	763	10	1	10

SEPARATOR PAGE





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

8 JUN 2001

OFFICE OF
THE REGIONAL ADMINISTRATOR

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Robert J. Clark
Manager, Environmental Affairs
Con-Way Central Express
8390 Hall Street
St. Louis, Missouri 63026

Dear Mr. Clark:

This letter is in response to Con-Way Central Express's (hereinafter "Con-Way") April 16, 2001, request for a self implementing polychlorinated biphenyls (PCB) disposal approval in accordance with the federal regulations for PCBs promulgated pursuant to the Toxic Substances Control Act (TSCA) and set forth in Part 761 of Title 40 of the Code of Federal Regulations (40 C.F.R. Part 761). The information compiled by Burns & McDonnell Engineering Company, Inc. of St. Louis, MO, and received by Region 7 in April of 2001, will be referred to as the Con-Way "application" and is incorporated by reference into this approval. The Environmental Protection Agency (EPA) Region 7 has reviewed the application and grants approval for the proposed remediation subject to the conditions specified in this letter. This approval is being issued under the authority granted to EPA by TSCA and pursuant to 40 C.F.R. § 761.61(c), (OMB Control Number 2070-0159). This approval is granted under the authority of Section 6 of TSCA, 15 U.S.C. § 2605.

1. Effective Date and Review Date

This approval shall become effective on the date the Regional Administrator of EPA Region 7 receives written notification from Con-Way of its acceptance of and intention to comply with the conditions specified herein. The person submitting such written notification must be an officer of Con-Way Central Express. This approval may be withdrawn if EPA Region 7 does not receive written notification from Con-Way of the acceptance of, and intention to comply with, the conditions and terms of this approval within forty-five (45) calendar days of receipt of this letter.



2074839

RECYCLE 
PAPER CONTAINS RECYCLED FIBERS

The EPA may review this approval in comparison to site conditions no later than one (1) year from its effective date. At that time, if the EPA finds that the continued implementation of this approval presents an unreasonable risk of injury to health or the environment, the EPA may modify, suspend, or revoke this approval. Alternatively, the EPA may request further information to make such a determination.

2. Description of Extent of PCB Contamination

The Con-Way site, a portion of which is the subject of this approval, is located at 8390 Hall Street, in St. Louis, MO. This site encompasses roughly 30 acres, of which approximately 18 acres are known as a historic landfill, with fill placed in the 1960's and 1970's to a depth of 16 to 18 feet depending on the location of the fill. The dimensions of the irregularly shaped landfill are approximately 765 feet long by approximately 420 feet at its greatest width. The disposal site subject of this approval encompasses 1.20 acres. The volume of the wastes generated from previous excavations is approximately 11,500 cubic yards. PCBs at concentrations greater than 50 parts per million (ppm) were found in and around the historic landfill area. Characterization of the stockpiled soil and wastes is found in the site characterization reports. Groundwater at the site has shown no impact from PCBs as indicated by historic data.

3. Remedial Action and Cap Remedy

Con-Way shall consolidate the contaminated material under 1.2 acre, and one foot thick clay liner covered by 12 inches of top soil (<1ppm PCBs). The actions approved are included in the document "Remedial Action Plan For On-site Cleanup of PCB Contaminated Waste for CNF, Con-way Central Express Facility St Louis, MO, and the Attachment entitled Con-Way Approval Attachment A. Within thirty (30) days of completing the cap remedy, Con-Way shall submit to EPA Region 7 a certification, signed by a professional engineer, verifying that such work has been completed in accordance with this approval.

4. Recording of Approval and Deed Notice

Within sixty (60) days of completing the construction of the cap remedy, as described above, Con-Way shall record a Deed Notice, in accordance with Missouri law, and 40 C.F.R. § 761.61(a)(8), with the County Clerk's Office, St. Louis County, Missouri. The Deed Notice shall be consistent with PCB Disposal Approval requirements and shall include a description of the extent of contamination found at the site; a description of the remedial action and the cap remedy; the restrictions on use included in Section 7 of this approval; and, a copy of this approval, appended as an attachment. Within ten (10) days of the recording, Con-Way shall submit to EPA Region 7 a copy of the Deed Notice, in addition to a certification signed by an officer of the company, that Con-Way has recorded the Deed Notice and approval, as required above.

5. Inspection and Maintenance Obligations; Annual Report to EPA

Con-Way shall provide EPA Region 7 with an update of the status of the remediation project by the 15th day of every month following the effective date of this approval until the capping operation is complete. After capping is complete, Con-Way shall inspect the cap at least annually, determine if uneven subsidence has occurred and maintain and/or repair the cap and vegetation as needed. The cap shall be maintained to prevent access to the contaminated material (e.g. soil and debris) under the cap and to prevent to the extent possible such material from being released to groundwater or to the air. Con-Way shall prepare written reports of visual inspections and maintenance needed and/or completed. In addition, Con-Way shall each year submit a copy of all such cap inspection and maintenance reports, as well as any other information regarding any problems maintaining the site remedy, to EPA Region 7, by March 1st covering the previous calendar year (January through December).

6. Sale of the Property

Con-Way shall notify EPA Region 7 of the sale of any portion of the Remediation Area, or any adjacent property located within 50 feet thereto, in writing, no later than thirty (30) days prior to such action. This notification shall include the name, address, and telephone number of the new owner(s). Con-Way shall visually inspect the cap within thirty (30) days prior to its sale of any such property, evaluate the integrity of the cap and provide a written report of the results of the inspection, and any as yet unreported inspections and/or maintenance on the disposal site cap, to EPA Region 7 and the buyer no later than ten (10) days prior to the sale. In the event that Con-Way sells any portion of the Remediation Area, or any adjacent property located within 50 feet thereto, Con-Way shall continue to be bound by all the terms and conditions of this approval, unless the following occurs:

1. The new owner(s) requests, in writing, that EPA Region 7 reissue this approval to the new owner(s), transferring all responsibility to comply with the terms and conditions of this approval to that entity or those entities.
2. EPA Region 7 reissues this approval to the new owner(s), transferring all responsibility to comply with the terms and conditions of this approval to that entity or those entities.
3. The new owner(s) provides written notification to EPA Region 7 of its acceptance of and intention to comply with the terms and conditions of the reissued approval. The reissued approval may be withdrawn if EPA Region 7 does not receive written notification from the new owner of its acceptance of, and intention to comply with, the conditions and terms of the reissued approval within forty-five (45) days of the date of the reissued approval. Under such circumstances, this approval, issued to Con-Way, will remain in effect.

7. Restrictions on Use

Con-Way may not use any portion of the Remediation Area, or any adjacent property located within 50 feet thereto, for any use other than as a "low occupancy area", as defined in 40 C.F.R. § 761.3. It shall not be used for parking or any other activity that would adversely impact the viability of the cover, change the site contours, change the drainage patterns, or increase the likelihood of adverse hydraulic impact. The site shall be enclosed in a fence as specified in the approved site plans as amended with access restricted to the extent that only personnel authorized by Con-way could enter for cap maintenance activities.

8. Modifications and Changes in Use

Any modification(s) in the plan, specifications, or information submitted in Con-Way's application, based upon which this approval has been issued, must receive prior written approval from EPA Region 7. Minor modifications to this approval may be authorized, in writing, by the Chief of Chemical Risk Information Branch. Con-Way shall inform EPA Region 7 of any modification, in writing, at least sixty (60) days prior to such change. No action may be taken to implement any such modification unless EPA Region 7 has approved of the modification, in writing. EPA Region 7 may request additional information in order to determine whether or not it approves of the modification. If such modification involves a change in the use of the site, EPA may revoke, suspend, and/or modify this approval if it finds that Con-Way's remedy may pose an unreasonable risk of injury to health or the environment due to the change in use or if EPA Region 7 does not receive information it deems appropriate from Con-Way to make a determination regarding such potential risk. Con-Way shall record any amendment to the Deed Notice and/or this approval, resulting from any modification(s), within sixty (60) days of such change(s).

9. EPA Entry and Inspection

Con-Way shall allow any authorized representative of the EPA to, at reasonable times:

1. inspect the Con-Way site to assess compliance with this approval and/or the federal PCB regulations;
2. inspect any records related to this approval and/or the federal PCB regulations; and
3. take samples for the purpose of assessing compliance with this approval and/or the federal PCB regulations.

Any refusal to allow any of the above actions may result in the suspension and/or revocation of this approval.

All notifications, documents, and requests to be submitted to EPA Region 7 as specified in this approval shall, unless EPA Region 7 later indicates otherwise in writing, be sent to:

United States Environmental Protection Agency, Region 7
Chemical Risk Information Branch
ATTN: PCB Approvals
901 North 5th Street
Kansas City, Kansas 66101
Telephone: (913) 551-7020 Facsimile: (913) 551-7065

This approval, issued pursuant to 40 C.F.R. § 761.61(c), is subject to Con-Way having provided EPA Region 7 with full and forthright disclosure of all material facts. Any misrepresentation or omission by Con-Way of any material fact in Con-Way's application may result in EPA's revocation, suspension and/or modification of this approval, in addition to any other legal or equitable relief or remedy EPA may choose to pursue under applicable law.

Con-Way shall be responsible for the actions (or the failure to act) of all individuals who implement or are otherwise involved in any activities taken pursuant to or otherwise required under this approval for the period that Con-Way is subject to the conditions of this approval. Con-Way's acceptance of this approval constitutes Con-Way's agreement to comply with:
1) all conditions and terms of this approval, and 2) all applicable provisions of federal, state and local law.

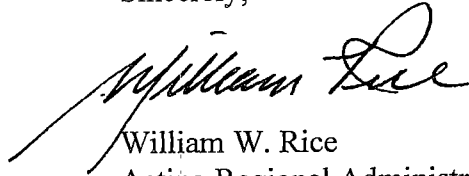
This approval specifies the requirements applicable under TSCA. This approval does not constitute a determination regarding requirements which may be applicable under other federal, state or local law. TSCA disposal requirements do not supercede other, more stringent, applicable federal, state, or local laws, including any applicable requirements under CERCLA and the Solid Waste Disposal Act and its amendments, including the Resource Conservation and Recovery Act.

Any failure by Con-Way to comply with any condition or term of this approval shall constitute a violation of said approval, which has been issued pursuant to 40 C.F.R. § 761.61(c); and thus in violation of Section 15(1)(C) of TSCA, 15 U.S.C. § 2614(1)(C). Any such violation(s) may result in an action by EPA for any legal or equitable relief or remedy available under applicable law. Any such violation might also result in EPA revoking, suspending, and/or modifying this approval.

EPA Region 7 finds that the operations to be authorized under this approval will not present an unreasonable risk of injury to health or the environment. This approval may be revoked, suspended and/or modified after Con-Way's acceptance thereof at any time if EPA Region 7 determines that implementation of this approval may present an unreasonable risk of injury to health or the environment. Nothing in this letter is intended or is to be construed to

to EPA under Section 6 of TSCA, 15 U.S.C. § 2605 and/or 40 C.F.R. Part 761.

Sincerely,

A handwritten signature in cursive script, appearing to read "William W. Rice".

William W. Rice
Acting Regional Administrator

cc: Bob Krager, Missouri Department of Natural Resources
Ronald W. Elder, P.E. Project Manager, Burns and McDonnell

Con-Way Approval Attachment A

Wastes beneath the foot print of the cap must be excavated and replaced in the same excavation compacting the waste to a proctor density of 90 percent.

The surface of the replaced waste shall be graded such that the berm peripheral area gradient will be reduced from the rise versus length ratio, 1 to 3 gradient to a ratio which would indicate a less steep slope, when determined possible taking into consideration the resulting volume of recompacted waste.

The gradient of the surface drainage way about the perimeter has been defined as 0.1% or approximately 1.2 inches per 100 feet. Construction precision has been described as being available to accommodate that requirement. In the event that the soils beneath the perimeter settle unevenly, the facility will be required to reinstate the design gradient unless a greater gradient can be accommodated. The drainage way would have to be maintained such that removal of the precipitation and site drainage would be facilitated and not allow ponding or percolation into waste.

The gradient of the area beyond the foot print of the cap along the east south east edge needs to be clarified. Ditches to provide drainage ways from the surface of waste disposal areas must be provided. All of the disposal area must also be enclosed in a fence such that the area of the site of disposed waste will not be subject to unauthorized personnel being allowed to trespass on the waste disposal site. The area appears not to be addressed with a cap as it will be excavated and all waste materials will be transferred to the disposal area.

The as-built site plans indicating the final disposal site elevations and slope gradients shall be provided to the EPA within six (6) weeks of completion of cap construction.

In the event that the cover has been significantly compromised, the facility owner will contact EPA, to request possible modification of the design and propose a reconstruction schedule.

The facility's consultant has specified a vegetative layer which is one foot thick and has indicated that such a layer and the vegetation that it must support would require minimum maintenance. The site is to be inspected monthly for:

1. Cover slippage
2. Vegetation dessication
3. Existence of unwanted vegetation species
4. Uneven subsidence as indicated by noting elevations as opposed to the gradients on the as built drawings,
5. Ponding
6. Damage resulting from equipment traffic
7. Evidence of vector populations

8. Following periods of local flooding, the site features should be inspected for damage
9. Any other feature of the site cover which would compromise its ability to contain waste and limit the flow of water through the site
10. Provide copies of documentation of the volume of the special waste removed to the special waste landfill

Analytical documentation that the contaminated debris has all been removed to the location of the cap must be submitted. The sampling methods, sampling points, data and data quality documentation must be included to validate that the effort was effective. One composite sample comprised of 9 surface soil samples must be taken from each 2500 square foot surface area unit to document that the remaining surface samples have PCB concentrations less than 5 parts per million. All of the area from which the current waste piles have been removed must be subject to this documentation.

Site remediation activities must be completed within six (6) months of the date of receipt of this letter.

Although annual summaries of the inspection reports are to be submitted to EPA, the monthly reports are to be retained for a period of three (3) years unless requested to maintain the records longer by EPA .



December 4, 2001

EPA Regional Administrator
Attn: Mr. William W. Rice
U. S. Environmental Protection Agency Region VII
901 N. 5th Street
Kansas City, KS 66101

Re: Remediation Implementation and Construction Quality Assurance Report
Con-Way Central Express Facility
8390 Hall Street, St. Louis, Missouri

Dear Mr. Rice:

On behalf of Con-Way Central Express (CCX) and CNF, Burns & McDonnell Engineering Company, Inc. (BMCD) is submitting this "Remediation Completion and Construction Quality Assurance Report" to EPA Region VII. This report summarizes construction and remediation activities associated with the capping of polychlorinated biphenyl (PCB) impacted waste at the facility located at 8390 Hall Street in St. Louis, Missouri (Site).

If you have any questions regarding the enclosed report, please contact me at (636) 305-0077 ext. 224.

Sincerely,

Ronald W. Elder, P.E.
Project Manager

Enclosure

cc: Robert J. Clark – CNF
Gary Messerotes - BMCD
Gene Evans – EPA Region VII



2074840

**REMEDATION IMPLEMENTATION AND
CONSTRUCTION QUALITY ASSURANCE REPORT
ENVIRONMENTAL CAP CONSTRUCTION**

**CON-WAY CENTRAL EXPRESS FACILITY
ST. LOUIS, MISSOURI**

DECEMBER 2001

22866

**Burns & McDonnell Engineering Company, Inc.
Engineers-Architects-Consultants
Fenton, Missouri**

TABLE OF CONTENTS

	<u>Page No.</u>
INDEX AND CERTIFICATION	CI-1
1.0 INTRODUCTION	1-1
2.0 PROJECT OVERVIEW	2-1
2.1 Project Description	2-1
2.2 Construction Area	2-1
2.3 Construction Quality Assurance Program	2-1
2.4 Project Organization	2-3
2.5 Project Meetings	2-4
3.0 WASTE PLACEMENT AND COMPACTION	3-1
3.1 Summary of Construction Activities	3-1
3.2 Waste Placement and Compaction CQA	3-2
3.2.1 Pre-Characterization Testing	3-2
3.2.2 Field Moisture and Density Testing	3-2
3.2.3 Observation of Construction Activities	3-2
3.3 Disposal of Non-PCB Material to an Offsite Landfill	3-3
3.4 Top of Waste Survey	3-3
4.0 COMPACTED CLAY LAYER	4-1
4.1 Summary of Construction Activities	4-1
4.2 Compacted Clay Layer CQA	4-2
4.2.1 Borrow Material Evaluation Testing	4-2
4.2.2 Field Moisture and Density Testing	4-3
4.2.3 Hydraulic Conductivity Testing	4-3
4.2.4 Observation of Construction Activities	4-4
4.3 Top of Clay Survey	4-4
5.0 TOPSOIL PLACEMENT AND SITE GRADING	5-1
5.1 Summary of Topsoil Placement	5-1
5.2 Grading and Drainage	5-2
5.3 Observation of Construction Activities	5-2
5.4 Top of Soil Cover System Survey	5-3
6.0 SEEDING AND EROSION CONTROL	6-1
6.1 Summary of Field Activities	6-1
6.2 Observation of Construction Activities	6-1
6.3 Erosion Control	6-1

7.0	FENCING CONSTRUCTION.....	7-1
7.1	Summary of Field Activities.....	7-1
7.2	Observation of Construction Activities.....	7-1
8.0	SITE HEALTH AND SAFETY.....	8-1
8.1	Summary of Health and Safety Activities.....	8-1
8.2	Personal Protective Equipment (PPE).....	8-1
8.3	Decontamination.....	8-1
8.4	Dust Suppression and Monitoring.....	8-2
8.5	Verification Sampling.....	8-2

APPENDICES

APPENDIX A -

Daily Field Activities Reports
Photographs

APPENDIX B -

Top of Waste As-Built Survey
Top of Clay Layer As-Built Survey
Top of Topsoil As-Built Survey

APPENDIX C -

Preconstruction Material Evaluation Test Results
In-Place Soil Liner Moisture and Density Test Results
In-Place Hydraulic Conductivity Test Results

APPENDIX D -

Waste Manifests and Disposal Scale Tickets

APPENDIX E -

Initial and Final Clay Layer Isopach Maps
Initial and Final Clay Plus Topsoil Layer Isopach Maps

APPENDIX F -

Dust Monitoring Analytical Data

Remedial Implementation and
Construction Quality Assurance Report
Con-Way Central Express Facility
St. Louis, Missouri

INDEX AND CERTIFICATION PAGE

REPORT INDEX

<u>Part No.</u>	<u>Part Title</u>	<u>Number of Pages</u>
	Index and Certification	1
1.0	Introduction	2
2.0	Project Overview	4
3.0	Waste Placement and Compaction	3
4.0	Compacted Clay Layer	4
5.0	Topsoil Placement and Site Grading	3
6.0	Seeding and Erosion Control	1
7.0	Fencing Construction	1
8.0	Site Health and Safety	3
	Appendices	

CERTIFICATION

Burns & McDonnell Engineering Company, Inc. (BMCD), hereby certifies that the compacted soil cover system for Con-Way Central Express Facility in St. Louis, Missouri was constructed in substantial compliance with the construction documents.

Prepared and Submitted By:

Ronald W. Elder

Ronald W. Elder, P.E.
Project Manager
Burns & McDonnell Engineering Company, Inc.

1.0 INTRODUCTION

The Con-Way Central Express facility is located at 8390 Hall Street, south of Gimblin Road and east of Hall Street, in St. Louis, Missouri. The facility is owned by CNF Transportation, Inc. (CNF) and serves as an active trucking facility. The Site is bordered by a Citgo gas service station to the north, a trucking facility to the east, Baden Auto Parts to the south and Hall Street to the west. The Chicago, Burlington and Quincy Rail Lines and the Mississippi River are located approximately one-half mile east of the Site. The nearest residential development is located approximately 250 feet northwest of the facility north of Gimblin Road and west of Hall Street.

Burns & McDonnell Engineering Company, Inc. (BMcD) was retained by CNF to oversee remedial implementation activities and provide construction quality assurance (CQA) services for the construction of a soil cover system to cap polychlorinated biphenyl (PCB) impacted waste on-site. Construction activities resulted in the creation of vegetated berm structure consisting of compacted soil and debris covered by a one-foot layer of compacted clay followed by a one-foot layer of topsoil. During construction, BMcD was responsible for monitoring construction activities and verifying that the material and installation procedures were in compliance with United States Environmental Protection Agency (USEPA) Toxic Substances Control Act (TSCA) regulations, construction specifications, and industry standards. Documentation furnished in the appendices of this report includes, but is not limited to, the following:

- Daily Field Activities Reports
- Waste Compaction Testing Documentation
- Pre-characterization Test Results of Clay Borrow Source
- Compacted Clay Cover Installation and Testing Documentation
- Topsoil Placement and Seeding Documentation
- Field and Laboratory Test Results

One or more CQA monitors were on-site during the following activities:

- Waste placement and compaction
- Compacted clay cover installation
- Protective topsoil cover placement and vegetation
- Surveying Activities
- Fencing Construction

* * * * *

2.0 PROJECT OVERVIEW

2.1 PROJECT DESCRIPTION

Construction activities included placement of a compacted soil cover system (cap) over PCB-impacted soil and debris, construction of a perimeter fence, and establishment of a grass vegetative cover at the Con-Way Central Express facility (Site). The limits of the cap at the Site encompass approximately one and a half (1.5) acres. The area was relatively flat prior to placement of the soil and debris stockpiles and is located on the eastern portion of the property limits.

2.2 CONSTRUCTION AREA

Construction zones were established prior to initiation of project activities and were protected by either permanent fencing or by temporary plastic fencing until waste was compacted and covered by clean clay material. The construction staging area during both the placement and compaction of PCB impacted waste and placement of clay and topsoil was located within the berm and cap footprint area.

The cover system consists of a minimum 10-inch thick compacted clay layer placed directly over the compacted waste, followed by a one-foot layer of topsoil serving as a vegetative layer over the compacted clay. The area was seeded to provide a vegetative cover to minimize erosion. Construction activities for the compacted waste, compacted clay cover system, and protective cover layer are discussed in Sections 3.0 through 5.0.

2.3 CONSTRUCTION QUALITY ASSURANCE PROGRAM

In order to implement the CQA program, BMcD followed TSCA regulations, construction specifications, and industry standards as guides.

CQA oversight for the placement and compaction of waste in the cap footprint area involved the following activities:

- Obtaining representative soil samples for Standard Proctor tests for development of compaction criteria
- Arranging for and coordinating the appropriate laboratory tests

- Determining compacted in-place density and moisture content of waste
- Observing construction procedures and ensuring compliance with specifications
- Documenting CQA activities
- Coordinating and reviewing completed compacted waste survey data

CQA oversight for the compacted clay cover system involved the following activities:

- Obtaining representative soil samples for Standard Proctor tests, hydraulic conductivity, grain size, and Atterberg limits testing
- Arranging for and coordinating the appropriate laboratory tests
- Determining compacted in-place density and moisture content
- Observing construction procedures and ensuring compliance with specifications
- Documenting CQA activities
- Coordinating and reviewing completed compacted waste survey data and preparation of a compacted clay cover conforming to the construction survey

CQA oversight activities for placement of the protective topsoil cover included the following:

- Coordinating and reviewing completed compacted clay survey data and preparation of a protective soil cover conforming to the construction survey
- Observing material delivery and unloading procedures
- Observing construction procedures
- Documenting CQA activities

BMCD's CQA field activities are summarized in the field activity reports. These reports, which also address routine issues and problem solutions, are included in Appendix A of this report. Photographs documenting construction are also included in Appendix A. Information regarding the as-built survey data for the top of compacted waste, top of compacted clay, and top of protective soil cover are included in Appendix B.

2.4 PROJECT ORGANIZATION

Owner

CNF
3240 Hillview Avenue
Palo Alto, CA 94304
Mr. Robert Clark, Environmental Manager

Facility Operator

Con-Way Central Express
8390 Hall Street
St. Louis, MO 63147
Mr. Robert Clark, Environmental Manager

CQA Engineer and General Contractor

Burns & McDonnell Engineering Company, Inc.
17 Cassens Ct.
Fenton, Missouri 63026
Mr. Bob Kuttles, Construction Project Manager
Mr. Ron Elder, P.E., CQA Manager and Project Manager

Earthwork Subcontractor

Dave Kolb Grading
5733 Westwood
St. Charles, MO 63304
Mr. Jeff Kolb, Owner
Mr. Les Weber, Superintendent

Fencing Subcontractor

Granite Inc.
1837 Madison Avenue
Granite City, IL 62040
Mr. Perry Smith, Assistant Manager

Surveyor

Burdine and Associates
1638 Jeffco Blvd.
Arnold, MO 63010
Mr. Dan Burdine, Project Manager

Independent Soils Testing Laboratory

Terracon
2220 Welsch Industrial Ct.
St. Louis, Missouri 63146
Mr. Doug Waldier, Project Manager

2.5 PROJECT MEETINGS

Pre-construction, safety, and daily scheduling meetings were held prior to and during the construction period. The purpose of these meetings was to aid in the coordination of the work among the members of the project organization.

Prior to the beginning of construction, the general pre-construction meeting, also serving as a design review meeting was held at a job trailer on-Site. The main purpose of this meeting was to introduce all parties involved in the project, clarify the responsibilities of all parties involved, establish lines of communication, review the project schedule and site safety procedures, and review and develop an understanding of the requirements of the work.

Daily meetings were held at the site with the specialty subcontractors to address scheduling, specific questions regarding daily work plans, weather conditions, etc. These discussions, where relevant, are summarized in the Daily Field Activities Reports included in Appendix A.

* * * * *

3.0 WASTE PLACEMENT AND COMPACTION

This section describes the construction and CQA activities associated with waste placement and compaction, and offsite disposal activities at the Site. CQA conformance and field geotechnical testing results are included in Appendix C.

3.1 SUMMARY OF CONSTRUCTION ACTIVITIES

Waste placement and compaction activities were conducted in early to late-July. Prior to waste placement activities, the cap footprint area was cleared free of vegetation to allow for the spreading and compaction of the waste material. Following removal of vegetation, stockpiles located within the cap footprint area were leveled using a bulldozer. The stockpiles located within the cap footprint were completely spread out over the entire footprint area. During the spreading of this material, a sheep's foot roller was attached to the back of the bulldozer and the waste was compacted. After existing waste was leveled and compacted, waste from outside the cap footprint area was moved to the cap area using a track-mounted loader and spread out and compacted within the cap area using the bulldozer with attached sheep's foot roller. Each lift of waste was compacted with a minimum of 4 passes over each lift or until the depression formed by compaction equipment was less than 20 percent of the lift thickness, whichever one was greatest. The track-mounted loader pushed the stockpiled waste located outside the cap area to the cap area, while the bulldozer spread the waste in lifts of 8 to 12 inches over the entire cap area. Larger size debris (i.e., boulders, concrete, etc.) were not placed within the upper 1.5 to 2 feet of the compacted waste, rather, were buried deep within the waste. Soil and smaller size debris were placed and compacted toward the top of the fill to achieve a smooth graded finish.

The capacity of the berm was smaller than anticipated and side slope angles were allowed to reduced from the original 3:1 (horizontal to vertical) ratio specified in the contract drawings to an average ratio of 6:1. In addition, an approximate average buffer distance of 15 feet was maintained between the perimeter of the compacted waste and the surrounding fencing on-Site.

A third-party geotechnical testing firm (Terracon) performed in-place moisture and density tests with a nuclear density gauge to assure the waste was compacted to the minimum requirements of the placement

criteria. Detailed records of the tests performed are listed in Appendix C. Each test location was given a number and then located on a drawing, also provided in Appendix C.

After waste placement and compaction activities were complete, a grid system was established over the surface of the berm, and stakes were placed every 25-feet over the top of waste.

3.2 WASTE PLACEMENT AND COMPACTION CQA

3.2.1 Pre-Characterization Testing

Prior to construction activities, a representative sample of the waste material was sent to a third-party geotechnical testing firm for a Standard Proctor test. A moisture-density relationship was calculated based on the test results of this sample. The evaluation test results are provided in Appendix C.

3.2.2 Field Moisture and Density Testing

BMcD required in-place moisture and density measurements made in accordance with ASTM D2922 (nuclear methods) to ensure that the compacted waste was compacted to at least 90 percent of the maximum Standard Proctor density. On July 16, 2001 Terracon performed four compaction tests (T-1 through T-4) over the compacted waste surface. Results of the compaction testing are provided in Appendix C. Based on the testing results, all four compaction tests verified compaction in excess of 90 percent of the maximum Standard Proctor density.

3.2.3 Observation of Construction Activities

The CQA monitor's observation of construction activities is documented in the daily field reports included in Appendix A. These observations typically included:

- Waste lift thickness
- Monitoring moisture content and dry density during waste placement
- Observing the effect of compaction equipment on the material placed
- Observing placement for material segregation and uniformity of the moisture content
- Observing that the waste was placed to the lines and grades shown on the drawings
- Ensuring appropriate health and safety procedures were practiced

3.3 DISPOSAL OF NON-PCB MATERIAL TO AN OFFSITE LANDFILL

Offsite disposal of non-PCB impacted waste material stockpiled outside of the cap area was conducted on July 9, 2001. Approximately 600 tons of waste material containing low levels of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) were disposed of at a special waste landfill. This material was stockpiled separately and handled separately from the PCB-impacted waste. The stockpiles were located south of the cap footprint area. A total of 24 truckloads carrying an average of 25 tons per load of waste were hauled to Superior Oak Ridge Landfill in Valley Park, Missouri. A track-mounted loader was used to load the special waste into the haul trucks. Signed waste manifests accompanied each truck hauling waste to the landfill. Copies of the waste manifests and scale tickets are included in Appendix D. Loading and hauling activities were completed in one day.

3.4 TOP OF WASTE SURVEY

Upon completion of the final grading activities, the top of the waste surface was surveyed on a 25-foot grid system. Points were shot and grade stakes were placed every 25 feet over the entire surface of the berm structure. In addition, the area to the south of the cap area that formerly contained soil and debris stockpiles was surveyed. The purpose of surveying this area was to verify that pre-existing elevations were achieved and that the stockpiled waste was removed. A Missouri-Licensed Professional Land Surveyor certified the finished grade of the top of waste. The finished survey of the top of waste is included in Appendix B.

* * * * *

4.0 COMPACTED CLAY LAYER

This section describes the construction and CQA activities associated with the compacted clay layer at the Site. CQA conformance and field geotechnical testing results are included in Appendix C.

4.1 SUMMARY OF CONSTRUCTION ACTIVITIES

Upon completion of waste placement and compaction activities, a minimum 10-inch thick compacted clay layer was constructed over the top of the waste material between late July and late August. The clay material was excavated from a borrow source located offsite. The borrow site was located approximately 12 miles from the Site near Granite City, Illinois, just north of the intersection of Interstate 270 and Route 111.

The borrow material consisted of a highly plastic, dark clay with a natural moisture content near the optimum moisture content for achieving compaction within the specified moisture-density placement zone. The clay material was excavated from the borrow area with a track-mounted loader which stripped the clay in thin lifts and preconditioned the clay as it was loaded into dump trucks. Dump trucks hauled the loads of clay to the Site and dumped each load in the cap area, where the clay was spread in 6 to 8-inch lifts with the bulldozer. Clay was initially dumped on the southwest end of the cap and spread out to the north and eastern extents of the cap area. Dump trucks backed up to the edge of the clay surface with each successive load, thereby not coming in contact with the compacted waste surface.

As clay was hauled to the cap area, the bulldozer made several passes over each successive load to crumble the clay into smaller particles and minimize clods. After spreading several loads of clay, the sheep's foot roller was attached to the back of the bulldozer and the clay was compacted. The sheep's foot compactor was verified to have 9-inch "feet", meeting specified criteria for suitable compaction equipment. The clay was placed in two lifts to achieve the required thickness of the compacted clay layer. Grade stakes were used as a guide to determine when the required thickness was met. Upon completion of construction of the clay layer, the surface of the clay was kept moist by either a water spray or natural rain to prevent drying and cracking until a surveyor verified the thickness. The clay layer was also

enhanced by an additional 2 inches thickness to prevent drying and desiccation of the required 10-inch thick cap prior to topsoil placement.

After the clay layer construction was complete, the grid system previously established at the top of waste was reestablished at the surface of clay layer. Survey results of the top of clay were compared to the survey results of the top of waste, and an isopach map was generated which illustrated the clay thickness over the cap area based on a 25-foot grid interval. While the majority of the capped area was well above 1.0 feet in thickness, the initial isopach map identified 12 areas over the surface of the capped area where the clay layer thickness was less than 0.90 feet. The initial clay layer isopach map is illustrated in Appendix E.

To achieve the appropriate thickness of clay in the low areas, the coordinates of the 12 areas were identified from the survey data. The surveyor placed grade stakes at the coordinates identifying the center of each 25 by 25-foot area defined by the isopach map to specify the additional thickness of clay needed to achieve a minimum of 10 inches over the entire area. The stockpiled borrow clay was used to fill each of the 12 low areas to achieve a targeted one-foot thickness over each 25 by 25-foot area. The final clay layer isopach map is illustrated in Appendix E.

Terracon performed in-place moisture and density tests with a nuclear density gauge to assure that the final clay layer was compacted to the minimum requirements of the placement criteria. Detailed records of the tests performed are listed in Appendix C.

4.2 COMPACTED CLAY LAYER CQA

4.2.1 Borrow Material Evaluation Testing

Prior to construction activities, samples of potential borrow material for clay layer construction were tested for hydraulic conductivity, atterberg limits, sieve analysis, and Standard Proctor. Several potential borrow areas were analyzed before identifying a Site that met all the construction requirements. Construction specifications and regulations required a cover material required a compacted soil cover material meeting the following requirements:

- Hydraulic conductivity less than 1×10^{-7} cm/s.
- Percent passing No. 200 sieve greater than 30 as determined by ASTM D4318.
- Liquid limit greater than 30 as determined by ASTM D4318.
- Plasticity index greater than 15 as determined by ASTM D4318.

After testing several sites, one site located was identified as meeting all the prerequisites. The borrow site was located approximately 12 miles from the Site near Granite City, Illinois, just north of the intersection of Interstate 270 and Route 111. The evaluation test results are provided in Appendix C.

4.2.2 Field Moisture and Density Testing

BMcD construction specifications required that in-place moisture and density measurements be made in accordance with ASTM D2922 (nuclear methods) to ensure that the clay layer was compacted to at least 95 percent of the maximum Standard Proctor density. On August 1 and August 8, 2001 Terracon performed a total of 12 compaction tests (T-5 through T-16) over the compacted clay surface. Results of the compaction testing are provided in Appendix C. Based on the testing results, all 12 compaction tests verified compaction in excess of 95 percent of the maximum Standard Proctor density.

4.2.3 Hydraulic Conductivity Testing

BMcD construction specifications and TSCA regulations require that the in-situ compacted clay layer be less than 1×10^{-7} cm/s to provide a long-term minimization of infiltration of liquids. On August 8, 2001 Terracon collected four in-situ samples (B-1 through B-4) of the compacted clay layer for hydraulic conductivity testing using Shelby tubes. Two of the four samples (B-1 and B-3) were found to recover 100 percent of the sample interval with little to no disturbance of the sample. Therefore, these two samples were analyzed in the laboratory for hydraulic conductivity. Results of the testing indicated hydraulic conductivities of 3.6×10^{-8} cm/s and 2.3×10^{-8} cm/s for samples B-1 and B-3, respectively. Results of the hydraulic conductivity testing are provided in Appendix C. Based on the testing results, the hydraulic conductivity of the clay layer is less than 1×10^{-7} cm/s, satisfying both the construction specifications and regulatory requirements for hydraulic conductivity.

4.2.4 Observation of Construction Activities

The CQA monitor's observation of construction activities is documented in the daily field reports included in Appendix A. These observations typically included:

- Monitoring lift thickness
- Monitoring moisture content and dry density of the compacted clay layer
- Observing the effect of compaction equipment on the material placed
- Observing placement for material segregation and uniformity of the moisture content
- Observing the previously compacted material for desiccation cracking
- Observing that the materials were placed to the lines and grades shown on the drawings
- Monitoring protection of placed material

4.3 TOP OF CLAY SURVEY

The top of the clay surface was surveyed on a 25-foot grid system. A Missouri-Licensed Professional Land Surveyor certified the finished grade of the top of compacted clay. The finished survey of the top of clay is included in Appendix B. The clay thickness was verified to be, on average, greater than one foot, exceeding the minimum 10-inch thickness requirement by nearly 20 percent. The survey verified that all cap areas meet minimum thickness requirements.

* * * * *

5.0 TOPSOIL PLACEMENT AND SITE GRADING

This section describes the construction and CQA activities associated with the placement of topsoil and final grading at the Site.

5.1 SUMMARY OF TOPSOIL PLACEMENT

Upon completion of the placement and compaction of the clay layer, a one-foot thick topsoil layer was constructed over the top of the compacted clay layer between late August and late September 2001. The clay material was excavated from a borrow source located offsite. The borrow site was located approximately 11 miles from the Site at the Fort Belle Quarry located at 14200 Lewis and Clark Blvd. in Florissant, Missouri.

The topsoil material consisted of a brown, clayey silt material with trace organic material. The topsoil material was excavated from the borrow area with a track-mounted loader which placed the soil into dump trucks. Dump trucks hauled the loads of topsoil to the Site and dumped each load in the cap area, where the topsoil was spread in 6 to 8-inch lifts with the bulldozer. Topsoil was initially placed in the southwest corner of the cap and spread out to the north and eastern extents of the cap area.

As topsoil was hauled to the cap area, the bulldozer made several passes over each successive load to crumble the topsoil into smaller particles and minimize clods. Grade stakes were used as a guide to determine when the required total thickness was met. A few loads of additional topsoil were stockpiled on-Site to place in low areas where the required total cap thickness was not met.

After the topsoil layer construction was complete, the grid system previously established at the top of clay was reestablished at the surface of topsoil layer. Survey results of the top of topsoil were compared to the survey results of the top of waste, and an isopach map was generated which illustrated the combined clay and topsoil thickness over the cap area based on a 25-foot grid interval. While the majority of the combined clay and topsoil capped area was well above 2.0 feet in thickness, the initial isopach map identified 9 areas over the surface of the capped area where the topsoil thickness was less than 1.0 feet. The initial topsoil layer isopach map is illustrated in Appendix E.

To achieve the appropriate thickness of the cover system in the low areas, the coordinates of the 9 areas were identified from the survey data. The surveyor placed grade stakes at the coordinates identifying the center of each 25 by 25-foot area defined by the isopach map to and marked the additional thickness of topsoil needed to achieve a minimum of one-foot topsoil thickness over the entire cap area. Additional topsoil stockpiled on-Site was used to fill each of the 9 low areas to achieve the required one-foot thick topsoil requirement over the entire cap. The surface was then re-graded and resurveyed for verification, and a revised isopach was generated following the second survey. The final isopach map verified a minimum two-foot thickness over the entire cap area, exceeding the specified requirements for thickness. Both the initial and final cover system isopach maps are illustrated in Appendix E. The final as-built survey of the top of topsoil surface is included in Appendix B.

Although not specified or required, a 4 to 6-inch layer of topsoil was spread over the area southwest of the cap, where existing soil/debris stockpiles were removed. This topsoil leveled the area and provided a suitable medium for establishment of vegetative cover.

5.2 GRADING AND DRAINAGE

Upon completion of the placement of the topsoil layer, the surface of the topsoil was graded smooth by back-dragging the bulldozer over the entire surface of the cap area. Remaining clods of soil were crumbled into fine particles and low spots were filled in with excess topsoil. Slopes were graded flat and straight. The crown of the cap was sloped approximately 3 to 5 percent to prevent ponding and to direct stormwater flow to the side slopes.

As indicated by the contract drawings, the cap was constructed to promote drainage along the western side slope via sheet flow into the existing storm sewer grates located on the asphalt pavement. A drainage swale with an approximate slope of 0.25 percent was constructed along the east side of the berm. This swale directs drainage to the north to a newly installed storm sewer grate just north of the cap area.

5.3 OBSERVATION OF CONSTRUCTION ACTIVITIES

The CQA monitor's observation of construction activities is documented in the daily field reports included in Appendix A. These observations typically included:

- Monitoring topsoil lift thickness
- Observing the previously compacted clay material for desiccation cracking
- Observing that the materials were placed to the lines and grades shown on the drawings
- Monitoring protection of placed topsoil
- Verifying slope gradients of completion cover system
- Verifying slope gradients of drainage swales and ensuring appropriate stormwater flow direction

5.4 TOP OF SOIL COVER SYSTEM SURVEY

The top of the soil cover system surface was surveyed on a 25-foot grid system. A Missouri-Licensed Professional Land Surveyor certified the finished grade of the top of the soil cover system. The finished survey of the top of the soil cover system is included in Appendix B.

* * * * *

6.0 SEEDING AND EROSION CONTROL

6.1 SUMMARY OF FIELD ACTIVITIES

Following verification of the soil cover system thickness, the cap was seeded and fertilized in early October for promotion of vegetative growth. Prior to seeding, the top 4 to 6-inches of topsoil was thoroughly loosened and pulverized, and the surface was graded to a smooth, even surface with a loose uniformly fine texture. Seed, fertilizer, and mulch were applied to the soil cover system area via hydroseeding, where the seed, fertilizer, and mulch are mixed with water and constantly agitated prior to and during application. The seed mixture, consisting of 75% tall fescue and 25% switchgrass, was distributed evenly over the entire soil cover system area at a minimum rate of 300 pounds per acre. Fertilizer was applied at a rate of 600 pounds per acre to prepare the seedbed. Currently, the grass is growing and should be ready for mowing and final inspection in late fall.

6.2 OBSERVATION OF CONSTRUCTION ACTIVITIES

The CQA monitor's observation of construction activities is documented in the daily field reports included in Appendix A. These observations typically included:

- Inspecting seed and fertilizer certificates to certify that they meet construction specifications
- Verifying even distribution of seed and fertilizer over entire cap area
- Taking photographs and documenting field activities

6.3 EROSION CONTROL

Silt fencing was installed around the cap area to control erosion runoff. The silt fencing consists of standard geotextile fabric and extends approximately one and a half foot high. The fabric was attached to wooden posts driven into the ground and spaced approximately every ten feet. The silt fencing surrounds the perimeter of the entire cap area.

* * * * *

7.0 FENCING CONSTRUCTION

7.1 SUMMARY OF FIELD ACTIVITIES

In order to satisfy TSCA regulations, the entire soil cover system was completely fenced to prevent entry from unauthorized personnel. Seven-foot high fencing was constructed along the western edge of the cap area to provide a barrier between the cap and active trucking operations. This fencing tied into existing fencing bordering the north, east and south extents of the cap area, thereby completely enclosing the cap area. Two gates (one man-gate and one for vehicle entry) were constructed along the newly constructed fencing. In addition, perimeter fencing was constructed around the former pile locations south of the cap area. This fencing ties into existing Site perimeter fencing, and completely encloses the former pile locations. Upon completion, both the cap area and former stockpile locations south of the cap area were completely enclosed by fencing. Gates allowing access to these areas were chained and locked.

7.2 OBSERVATION OF CONSTRUCTION ACTIVITIES

The CQA monitor's observation of construction activities is documented in the daily field reports included in Appendix A. These observations typically included:

- Directing placement of fence lines and observing installation of fence posts
- Observing installation of fence fabric and barbed wire
- Taking photographs and documenting field activities

* * * * *

8.0 SITE HEALTH AND SAFETY

8.1 SUMMARY OF HEALTH AND SAFETY ACTIVITIES

A Site Health and Safety Plan (SHSP) prepared by BMcD and amended by specialty subcontractors, as appropriate, were reviewed prior to Site construction activities to identify potential chemical and physical hazards, appropriate personal protective equipment (PPE) and monitoring equipment, emergency phone numbers, and local hospital information. The SHSP also identified health and safety responsibilities of all parties and included appropriate forms for equipment calibration and testing, field amendments, and safety checklists.

During project construction activities, a brief daily health and safety meeting was held each morning prior to construction activities to reinforce important and appropriate health and safety practices and procedures to construction personnel.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Construction personnel working in or near the remediation area wore appropriate PPE during waste handling activities. Construction personnel were required to wear Modified Level D protection during waste handling activities. Construction equipment operators were completely enclosed in the cab of the bulldozer and track-mounted loader, thus protecting them from direct exposure to the waste material. Safety goggles, Nitrile[®] gloves, steel-toe boots, and protective clothing were required for any personnel potentially coming into contact with impacted soil and debris.

8.3 DECONTAMINATION

All equipment coming into contact with waste during remediation activities were decontaminated within the cap area prior to leaving the Site. Construction equipment, trucks, tools, and materials in contact with waste were scraped clean of any visible encrusted soil and debris. BMcD personnel inspected all equipment and material leaving the Site to ensure proper decontamination was performed. Soil and debris generated by decontamination practices were placed with the waste material being capped. Disposable PPE generated during project activities was disposed of as normal Subtitle D landfill waste.

8.4 DUST SUPPRESSION AND MONITORING

Active control methods were applied to minimize dust generation and prevent airborne dust from dispersing into the atmosphere during soil handling activities. Efforts were made to ensure that stockpiles not involved with construction activities were covered with plastic as long as possible. A water truck with a high-pressure spray was on-Site at all times to prevent dust generation. To minimize the generation of dust, a water mist was sprayed in the vicinity of activity both prior to and during construction activities in particular areas of work.

In order to measure the effectiveness of dust control methods, dust monitoring was performed during waste handling activities. Concentrations of PCBs in dust were measured using sampling pumps attached to a Florisil tube with a filter and sampling media. Sampling pumps were either attached to a construction operator handling waste material or to a fixed point around the perimeter of the construction area. Down-wind sample points were placed in areas with high potential for detecting dust generation. A total of 10 samples (five worker samples and five fixed point samples) were collected between early July and early August 2001. Samples were sent to Galson Laboratories in East Syracuse, New York for analysis of PCBs according to NIOSH Method 5503.

Sample pumps were run for a period of 8 to 10 hours, representing a full work day. Sample pumps were pre-calibrated by the laboratory and were checked both prior to and after use to ensure that the proper flow rate was maintained. Periodic inspections of the sampling pumps were made during use to ensure that the pumps were continually drawing air.

Positive detections of PCBs were found in 3 of the 10 samples at concentrations ranging from 0.0009 to 0.001 mg/m³ (milligrams per cubic meter). The detected levels of PCBs in dust were well below the action level of 0.5 mg/m³ established in the SHSP.

8.5 VERIFICATION SAMPLING

Verification sampling was not conducted at the Site due to the fact that all stockpiles containing PCBs greater than 50 ppm were located within the cap footprint area. Since no material containing PCBs greater than 50 ppm was moved or located to outside the footprint, verification sampling was not necessary. The area containing stockpiles located south of the cap area characterized with PCBs less than 50 ppm was

completely enclosed in a fence per TSCA regulations. Stockpiles located outside the cap footprint area were excavated to pre-existing elevations to ensure that all stockpiled material had been recovered and placed within the cap. Construction equipment was staged within the cap footprint area during the entire project, and therefore verification sampling of the staging area was unnecessary.

* * * * *



APPENDIX A
DAILY FIELD ACTIVITIES REPORTS
PHOTOGRAPHS

DAILY FIELD ACTIVITIES REPORTS

Burns & McDonnell Engineering

DAILY REPORT
No. 00001

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/2/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Conway

JOB:

TEMPERATURE: 70 - 80

PRECIPITATION: Rain

SKY: Overcast

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): Held pre-construction meeting with Dave Kolb grading at site.
2. Tests and/or control activities performed with references to specifications / plan requirements: Reviewed all pre-requisite submittals, health & safety requirements, and work-site logistics. Gave authorization to mobilize and start work as soon as insurance certificates are received.
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client:
8. Job safety evaluations: Reviewed overall safety requirements in pre-con meeting.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
963 Loader	KOLB	1	Caterpillar	SITE	Mobe

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC		1			SITE	

Certified By: Burns & McDonnell Engineering

Date: 7/2/01

Signed:

Ron Elder
~~Bob Kuttles~~ *Ron Elder*

Burns & McDonnell Engineering

DAILY REPORT

No. 00001

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/2/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Conway

JOB:

TEMPERATURE: 70 - 80

PRECIPITATION: Rain

SKY: Overcast

WIND: 00-10

ACTIVITY

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
PM	BMC	1				SITE	
Super	KOLB	1				SITE	
Totals:		3	0	0	0		

Certified By: Burns & McDonnell Engineering

Date: 7/2/01

Signed: Ron Elder
~~Bob Kutties~~ Ron Elder

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/3/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): Leveled piles for accessways to VOC/SVOC pile and trees/vegetation to be cleared. Les Weber (Superintendent) and Ken Eichler (Operator) from Kolb on-Site. Ken used high lift to level off small hump piles in front of VOC/SVOC pile. Ken cleared area in back to pile trees/vegetation. Ken also cleared a zone along the fenceline separating the two pile areas to allow trucks to move vegetation in cap area to the tree pile area.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client:

8. Job safety evaluations: Went over Site Health and Safety Plan with Les and Ken of Kolb. Discussed emergency procedures, route to hospital, PPE, and air monitoring. Went over air monitoring procedures and explained air monitoring devices to be worn by workers. Both Les and Ken signed the SHSP. Attached an air sampling pump to Ken for today's work. Collected air sampling pump and sample media from Ken at the end of the day.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
963 Loader	KOLB	1	Caterpillar	SITE	Start Grading

Certified By: Burns & McDonnell Engineering

Date: 7/5/01

Signed:

Ron Elder
Bob Kuttles Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00002

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/3/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
PM	BMC	0				SITE	
Super	KOLB		1			SITE	
Operator	KOLB			1		SITE	
Totals:		1	1	1	0		

Certified By: Burns & McDonnell Engineering

Date: 7/5/01

Signed:

Ron Elder
~~Bob Kuttles~~ Ron Elder

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 7/5/01**REPORT PERIOD:** Daily**DAY:** Thursday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Les, Ken, and water truck operator on-site for Kolb. Ken moved remaining stockpiles outside of cap area between two linear shaped piles to clear path to move trees to brush pile area. Cleared small brush and trees with high lift within cap area. Sawed larger trees with chainsaw. Ken attached a grappler to the high lift to move large trees to brush pile area. Made approximately 3 trips and grappler busted a hose. Ken reattached the bucket to the high lift and proceeded to continue leveling piles for the remainder of the day. Water truck operator was on-site to spray down piles during pile leveling activities.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: Discussed with Kolb importance of keeping a water truck on-site at all times and requested that an operator remain on-site when moving soil/debris. Directed Kolb to use water truck in back of cap area, where dust was being generated.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
963 Loader	KOLB	1	Caterpillar	SITE	Start Grading

Certified By: Burns & McDonnell Engineering**Date:** 7/5/01**Signed:**

Ron Elder
Bob Kuttas *Ron Elder*

Burns & McDonnell Engineering

DAILY REPORT

No. 00003

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/5/01

REPORT PERIOD: Daily

DAY: Thursday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
PM	BMC	0				SITE	
Super	KOLB		1			SITE	
Operator	KOLB			1		SITE	
Totals:		1	1	1	0		

Certified By: Burns & McDonnell Engineering

Date: 7/5/01

Signed: Ron Elder
Bob Kuttles Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00004**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 7/6/01**REPORT PERIOD:** Daily**DAY:** Friday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Clear**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Mobilized a CAT D6H XL dozer on site. Dozer operator and high lift operator begin spreading waste to cap area. Kolb fixes grappler for high lift and places remaining trees/brush from cap area to the brush pile area. High lift operator clears an approximate 10-foot wide path in trees around piles south of cap area to allow placement of fencing. Spend remainder of day leveling off piles within cap area and pushing debris away from fencing to south of cap and along edge of asphalt to allow a buffer zone for placement of the cap.

2. Tests and/or control activities performed with references to specifications / plan requirements. None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: Go over health and safety plan with Alan Weber, dozer operator. Discuss emergency procedures, PPE, health risks, monitoring, etc. Alan signs the health and safety plan..

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 Loader	KOLB	1	Caterpillar	SITE	Start Grading
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Water Truck	KOLB	1		SITE	Dust Suppression

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
PM	BMC	0				SITE	
Super	KOLB		1			SITE	
Operator	KOLB			1		SITE	
Water Operator	KOLB			1		SITE	
Operator 2	KOLB			1		SITE	
Totals:		1	1	3	0		

Certified By: Burns & McDonnell Engineering**Date:** 7/26/01**Signed:**

-Bob Kuttles

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00005**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 7/9/01**REPORT PERIOD:** Daily**DAY:** Monday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 90 - 100**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Prepared waste manifests for removal of approx. 600 cy of VOC/SVOC impacted material to a special waste landfill. Haul trucks arrived on site at 0715. Kolb used the high lift to load long bed trucks with soil/debris. Dozer operator continued spreading waste within the cap area and created remaining buffer zone around cap extents to allow placement of clay and drainage paths. Removed all impacted waste designated to go to Superior Landfill. A total of 24 truckloads carrying an average of 26 tons per load disposed of the waste. Discussed drainage issues with Kolb. The drainage grate to north of cap to accept flow from east side of the cap appears to be at a higher elevation than the neighboring property just east of the Site. May need to construct a small berm to prevent drainage from flooding their property and keep it on site.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: Checked flow rate on sampling pump with flow rotometer; calibration passed.

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Collected 2 dust samples for PCB analysis, one sample attached to high lift worker, and another at a fixed point on the fence next to the double swing gate.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 Loader	KOLB	1	Caterpillar	SITE	Start Grading
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Water Truck	KOLB	1		SITE	

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
PM	BMC	0				SITE	
Super	KOLB		1			SITE	
Operator	KOLB			1		SITE	
Operator 2	KOLB			1		SITE	

Certified By: Burns & McDonnell Engineering**Date:** 7/26/01**Signed:**

Bob Kuttus

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00005**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 7/9/01**REPORT PERIOD:** Daily**DAY:** Monday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 90 - 100**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY****FIELD FORCE LABOR**

Category	Source	Supv.	Frnm.	Jrny.	Appr.	Work Area	Remarks
Water Operator	KOLB			1		SITE	
Totals:		1	1	3	0		

VISITORS

Time	Company	Visitor Name	Remarks
1132	Con-Way Transportation Services	Rob Schmidt	observe Site; discuss fence removal.
1302	Burns & McDonnell Engineering	Tom Zychinski	observe Site.

Certified By: Burns & McDonnell Engineering**Date:** 7/26/01**Signed:***Ron Elden*~~Bob Kuttles~~

Burns & McDonnell Engineering

DAILY REPORT**No. 00006**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 7/10/01**REPORT PERIOD:** Daily**DAY:** Tuesday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 90 - 100**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Begin moving soil from south of cap area through double swing gate and into the cap area. High lift operator pushes soil down from piles to gate entrance while dozer pushes soil to cap area. A sheepsfoot roller is mobilized on-site at 0956. The roller attaches to the back of the dozer to compact the waste. Kolb spreads a lift of waste, then attaches the sheepsfoot to the dozer to compact. Kolb begins piling up big concrete boulders in one location near gate within cap area. Kolb unattaches sheepsfoot to spread more soil, then attaches later to compact newly placed waste. Laclede Gas and Mississippi Transit Authority clear utilities at the Site. Dozer operator opens a hole in the middle of the cap at the end of the day to place big concrete boulders.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: Checked flow rate on sampling pump with flow rotometer; calibration passed.

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

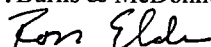
8. Job safety evaluations: Collect air sample at fence location (A-2).

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 Loader	KOLB	1	Caterpillar	SITE	Start Grading
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Water Truck	KOLB	1		SITE	
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
PM	BMC	0				SITE	
Super	KOLB		1			SITE	
Operator	KOLB			1		SITE	
Operator 2	KOLB			1		SITE	

Certified By: Burns & McDonnell Engineering**Date:** 7/26/01**Signed:**
~~Bob Kuttles~~

Burns & McDonnell Engineering

DAILY REPORT

No. 00006

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/10/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 90 - 100

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

FIELD FORCE LABOR

Category	Source	Supv.	Frnm.	Jrny.	Appr.	Work Area	Remarks
Water Operator	KOLB			1		SITE	
Totals:		1	1	3	0		

Certified By: Burns & McDonnell Engineering

Date: 7/26/01

Signed: Bob Kuttles
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT**No. 00007**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 7/11/01**REPORT PERIOD:** Daily**DAY:** Wednesday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 10-20**ACTIVITY**

1. Work performed today (location, description, and by whom): Continue moving piles from outside of cap area to within cap area extents through double swing gate. Kolb is using the same method, where the high lift operator pushes soil just through the gate, then the dozer pushes soil within the cap extents. Kolb buries the large concrete boulders encountered in the waste piles into the opening created by the dozer yesterday. SM&P clears both phone and electric lines within our construction area. Attach sheepsfoot roller at end of day to compact the waste that was placed during the day.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Collect worker air sample (W-3).

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 Loader	KOLB	1	Caterpillar	SITE	Start Grading
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Water Truck	KOLB	1		SITE	
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work/Area	Remarks
QA Engineer	BMC	1				SITE	
PM	BMC	0				SITE	
Super	KOLB		1			SITE	
Operator	KOLB			1		SITE	
Operator 2	KOLB			1		SITE	
Water Operator	KOLB			1		SITE	
Totals:		1	1	3	0		

Certified By: Burns & McDonnell Engineering**Date:** 7/26/01**Signed:** Ron Elden
~~Bob Kuttes~~

Burns & McDonnell Engineering

DAILY REPORT**No. 00008**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 7/12/01**REPORT PERIOD:** Daily**DAY:** Thursday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 60 - 70**PRECIPITATION:** Rain**SKY:** Overcast**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Finish moving piles from outside of cap area to within cap area extents through double swing gate with exception of gravelly soil pile. Kolb cleans up area where debris piles were located. Attached sheeps foot roller to high lift to compact waste that was moved to cap area. Dozer began shaping sideslopes and general cap configuration. Later in the day, the high lift was used to push back more material along the asphalt edge. to allow placement of clay and topsoil to asphalt grade. Rain caused puddling in certain areas around perimeter of compacted berm. Drainage from neighboring property to west flows into Con-Way's property along the eastern fence. Neighboring property does not have any drainage inlets in the vicinity of the cap area.

Les said Jeff has identified another place (5th try) to look for clay for our cover system. The site is located near Gateway in Illinois. Les left to meet the geotech contractor to test soil.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 Loader	KOLB	1	Caterpillar	SITE	Start Grading
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Water Truck	KOLB	1		SITE	
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
PM	BMC	0				SITE	
Super	KOLB		1			SITE	
Operator	KOLB			1		SITE	
Operator 2	KOLB			1		SITE	

Certified By: Burns & McDonnell Engineering**Date:** 7/26/01**Signed:** Ron Elder
~~Bob Kuttles~~

Burns & McDonnell Engineering

DAILY REPORT

No. 00008

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/12/01

REPORT PERIOD: Daily

DAY: Thursday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 60 - 70

PRECIPITATION: Rain

SKY: Overcast

WIND: 00-10

ACTIVITY

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Water Operator	KOLB			1		SITE	
Totals:		1	1	3	0		

Certified By: Burns & McDonnell Engineering

Date: 7/26/01

Signed: Bob Kuttles
~~Bob Kuttles~~

Burns & McDonnell Engineering

DAILY REPORT**No. 00009**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 7/13/01**REPORT PERIOD:** Daily**DAY:** Friday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Clear**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Finish moving gravelly soil piles from outside of cap area to within cap area extents through double swing gate. Spread gravelly soil in lift on top of compacted waste. Prepare 4 testing areas for compaction where gravelly soil is placed and compacted. Ken Grist of Burns & McDonnell Health and Safety group on site to perform an audit. Ken suggests the following improvements:

- Earplugs for workers or people near loud equipment
- place a wind indicator (windsock) on-site to determine wind direction.
- Log all H&S meetings in logbook
- No food or drink inside work area (within cab of equipment)
- Give copy of all PCB dust monitoring data to Eric Wenger in K.C.

After lunch, Kolb graded and smoothed the fenceline within the trees for preparation of fence installation. Buried a pile of rubber tires in a hole near a concrete burial area.

2. Tests and/or control activities performed with references to specifications / plan requirements: Checked both sample pumps in use with flow meter at end of the day. Verified air flow at 0.2 L/min for both pumps.

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 Loader	KOLB	1	Caterpillar	SITE	Start Grading
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Water Truck	KOLB	1		SITE	
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC		1			SITE	
PM	BMC		0			SITE	
Super	KOLB			1		SITE	

Certified By: Burns & McDonnell Engineering**Date:** 7/26/01**Signed:** Bob Kuttles
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT

No. 00009

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/13/01

REPORT PERIOD: Daily

DAY: Friday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Clear

WIND: 00-10

ACTIVITY

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Operator	KOLB			1		SITE	
Operator 2	KOLB			1		SITE	
Water Operator	KOLB			1		SITE	
Totals:		1	1	3	0		

VISITORS

Time	Company	Visitor Name	Remarks
0832	Burns & McDonnell Engineering	Ken Grist	

Certified By: Burns & McDonnell Engineering

Date: 7/26/01

Signed: Bob Kuttles
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT**No. 00010**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 7/16/01**REPORT PERIOD:** Daily**DAY:** Monday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Clear**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Grade and smooth surface of compacted waste and drainage swales. Performed compaction tests of gravelly soil material in 4 locations. Terracon on-Site to perform compaction testing. All 4 tests pass 90% compaction of standard Proctor density. Surveyor on-Site to survey top of compacted waste. Establish a 25-foot grid over the cap area. Survey entire cap area, plus area to south where piles were moved to cap area. Set stakes every 25 feet, and mark 1-foot intervals for placement of clay and topsoil.

2. Tests and/or control activities performed with references to specifications / plan requirements: Compaction testing at 4 locations within crown of cap (tests T-1 through T-4). Tests results verbally communicated later in the day by Terracon. All 4 tests passed compaction tests.

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

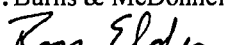
8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Water Truck	KOLB	1		SITE	
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
PM	BMC	0				SITE	
Super	KOLB		1			SITE	
Operator	KOLB			1		SITE	
Surveyor	BURDINE			2		SITE	
Water Operator	KOLB			1		SITE	
QA/QC Engineer	TERR			1		SITE	
Totals:		1	1	5	0		

Certified By: Burns & McDonnell Engineering**Date:** 7/26/01**Signed:**
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT

No. 00011

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/17/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: Rain

SKY: Overcast

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to rainy conditions and waiting for results of permeability tests from potential caly borrow area.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

Certified By: Burns & McDonnell Engineering

Date: 7/26/01

Signed: Ron Elden
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT

No. 00012

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/18/01

REPORT PERIOD: Daily

DAY: Wednesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: Rain

SKY: Overcast

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to rainy conditions and waiting for results of permeability tests from potential clay borrow area.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

Certified By: Burns & McDonnell Engineering

Date: 7/26/01

Signed: Ron Elola
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT

No. 00013

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/19/01

REPORT PERIOD: Daily

DAY: Thursday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: Rain

SKY: Overcast

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to rainy conditions and waiting for results of permeability tests from potential clay borrow area.

Received topographic map of top of compacted waste surveyed by Burdine and Associates, Inc. on Monday. Visually verified that waste material south of cap area where stockpiles <50 ppm PCBs were located was graded to elevations at or below pre-existing elevations at the Site.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

Certified By: Burns & McDonnell Engineering

Date: 7/26/01

Signed:

Ron Elden
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT

No. 00014

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/20/01

REPORT PERIOD: Daily

DAY: Friday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: Rain

SKY: Overcast

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to rainy conditions. Permeability testing for borrow area in Illinois were completed. Terracon reported a permeability on the order of 10E-08 cm/sec, meeting our specified 10E-07 cm/sec or less requirement.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

Certified By: Burns & McDonnell Engineering

Date: 7/26/01

Signed:

For Elder
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT

No. 00015

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/23/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Overcast

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to rainy conditions. Borrow site is inaccessible due to wet conditions. Cannot back haul trucks to borrow area.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

Certified By: Burns & McDonnell Engineering

Date: 7/26/01

Signed: *Bob Kuttles*
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT

No. 00016

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/24/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to wet conditions at Site and at clay borrow area.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

Certified By: Burns & McDonnell Engineering

Date: 7/26/01

Signed: *Bob Kuttas*
Bob Kuttas

Burns & McDonnell Engineering

DAILY REPORT**No. 00017**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 7/25/01**REPORT PERIOD:** Daily**DAY:** Wednesday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): No work performed today due to wet conditions at Site and at clay borrow area.

Bob Kuttles, Les Weber, and Ron Elder on Site to look at construction progress to date and discuss design/construction issues. Bob and Ron go over construction activities completed to date and perform a thorough site walk. Discuss possibilities to drain water along south and east side of berm structure. After discussion with Les and Marvin Allen (Penta Building Group), decide best alternative is to install a new surface drain to tie into the existing storm sewer that runs between the northernmost sewer grate along the edge of asphalt west of the berm and the original storm sewer grate that was to be used for drainage just inside the employee parking lot. Marvin will get his plumber to get a price quote to install a vertical conduit and grate to tie into the existing storm sewer.

Other issue we discussed with Les (Kolb) include placing approx. 4-inches topsoil in area south of cap area and seed to provide a vegetative layer where the former stockpiles <50 ppm PCBs were located. We also discussed routing drainage along plastic fencing at north edge of cap area instead of along the fence line. Will have fencing contractor place fence posts prior to placement of gravel bed, and will dispose of cuttings beneath cap.

Following the site visit, Ron and Bob went to see the clay borrow area in Illinois, approx. 12 miles from the Site.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken:

7. Authorizations for out-of-scope work or directives received from Client: None

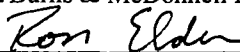
8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

VISITORS

Time	Company	Visitor Name	Remarks
0915	Burns & McDonnell Engineering	Bob Kuttles	
0945	Dave Kolb Grading	Les Weber	
1000	The Penta Building Group	Marvin Allen	

Certified By: Burns & McDonnell Engineering**Date:** 7/26/01**Signed:**
~~Bob Kuttles~~

Burns & McDonnell Engineering

DAILY REPORT

No. 00018

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/26/01

REPORT PERIOD: Daily

DAY: Thursday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to wet conditions at Site and at clay borrow area.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken:
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

Certified By: Burns & McDonnell Engineering

Date: 8/10/01

Signed: Ron Elder
Bob Kuttles Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00019**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 7/27/01**REPORT PERIOD:** Daily**DAY:** Friday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): No work performed today due to wet conditions at Site and at clay borrow area.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken:
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

Certified By: Burns & McDonnell Engineering**Date:** 8/10/01**Signed:***Ron Elder*

Bob Kuttes

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00020

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 7/30/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 90 - 100

PRECIPITATION: None

SKY: Clear

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): Today began hauling vlay to Site from clay borrow area in Illinois. Began hauling clay at approx. 0900. Had issues with union labor at borrow site. Kolb had to get Illinois union operator and laborer to place soil in trucks. Kolb spread soil in cap area starting at the south end and working toward the north. Attached sheepsfoot roller to dozer at approx. 1300, and compacted clay concurrently while spreading clay. Finished hauling clay at 1700. Aprox. 60-70 truckloads of clay on-site.

Soil material is a very dark gray and black, high plastic clay. Moisture of clay is very high. Kolb plans to perform compaction testing on Wednesday.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken:

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer
953 high lift	KOLB	1		BORROW	load trucks with clay

Certified By: Burns & McDonnell Engineering

Date: 8/1/01

Signed: Ron Elder

Bob Kuttes

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00021**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 7/31/01**REPORT PERIOD:** Daily**DAY:** Tuesday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 90 - 100**PRECIPITATION:** None**SKY:** Clear**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Continued hauling clay to Site from clay borrow area in Illinois. Hauling activities commenced at approx. 0730. Hauled a total of 78 truckloads of clay yesterday (approx. 600 yards). Kolb continued spreading soil in cap area starting working from the southwest end and spreading to the north and northeast. Attached sheepsfoot roller to dozer at approx. 1230, and compacted clay concurrently while spreading clay. Finished hauling clay at 1700. Approx. 70-80 truckloads of clay on-site.

Soil material is still very dark gray and black, high plastic clay. Moisture of clay is very high (damp to moist). Using tracks of dozer to break up large clods of clay to smaller pieces less than 3-inches in diameter. Kolb has Terracon scheduled to test placed clay tomorrow. Told Kolb that we may need to have a water truck on site, since some of the material placed yesterday has dried out. Les Weber verified that the material being brought on-site is representative of the material that was tested for geotechnical properties.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken:

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer
953 high lift	KOLB	1		BORROW	load trucks with clay

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC	1				SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 8/1/01

Signed: Bob Kuttles
Bob Kuttles

Burns & McDonnell Engineering

DAILY REPORT

No. 00022

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/1/01

REPORT PERIOD: Daily

DAY: Wednesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 90 - 100

PRECIPITATION: None

SKY: Clear

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): Continued hauling clay to Site from clay borrow area in Illinois. Hauling activities commenced at approx. 0730. Used 10 trucks to haul clay to Site instead of 8 from the two previous days. Kolb continued spreading soil in cap area starting working from the southwest end and spreading to the north and northeast. Began spreading clay in crown area and on east side of berm. Attached sheepsfoot roller to dozer at approx. 1330, and compacted clay concurrently while spreading clay. Mike Waldier of Terracon on-Site at approx. 1400 to perform compaction testing of clay cap that has been placed and compacted. Finished hauling clay at 1700. Over 100 truckloads of clay on-site.

Moisture of clay being dumped on-Site is still very high (damp to moist). Using tracks of dozer to break up large clods of clay to smaller pieces less than 3-inches in diameter. Mike Waldier of Terracon verified that clay being placed is representative of what he saw in the lab, with the exception of some minor bits of gravel in small areas of the cap.

Bi-State Utilities began work on installing a drainage inlet at the north end of the cap. Brought a backhoe and excavated down approx. 6 feet to the top of the existing 36" rcp that runs between two other drainage inlets. Gravel backfill surrounds the existing drainage pipe and will be used to backfill when completed. Bi-State poured a concrete pad around exposed 36" rcp. Bi-State will sawcut hole in pipe and install vertical conduit and drain grate tomorrow.

2. Tests and/or control activities performed with references to specifications / plan requirements: Terracon performed 5 compaction tests to measure moisture/density relationship in compacted soil. Density results indicated compaction was meeting 95% requirement for all tests. Compaction was close to 100% for all tests. Moisture was at or close to optimum for all 5 tests. May need to increase moisture in certain areas before completion of cap.

3. Test equipment calibrations: standard calibration of nuclear gauge performed by Terracon

4. Off-site materials received: Approx. 800 cubic yards of clay from borrow site.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken:

7. Authorizations for out-of-scope work or directives received from Client: Authorization for installing drainage inlet was faxed by Bob Kuttles to Mike Jerome of Bi-State Utilities late yesterday. Also, a change order was faxed by Bob Kuttles to Kolb Grading accepting the credit for savings in waste disposal facility, and requesting to place 4" of topsoil and seed the area south of the cap where stockpiles were located.

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with clay
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

Certified By: Burns & McDonnell Engineering

Date: 8/1/01

Signed: Ron Elder

Bob Kuttles

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00022

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/1/01

REPORT PERIOD: Daily

DAY: Wednesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 90 - 100

PRECIPITATION: None

SKY: Clear

WIND: 00-10

ACTIVITY

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC	1				SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
QA Engineer	TERR			1		SITE	
Totals:		1	1	3	0		

Certified By: Burns & McDonnell Engineering

Date: 8/1/01

Signed: Ron Elder
Bob Kuttas Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00023**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 8/2/01**REPORT PERIOD:** Daily**DAY:** Thursday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 90 - 100**PRECIPITATION:** None**SKY:** Clear**WIND:** 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): Continued hauling clay to Site from clay borrow area in Illinois. Hauling activities commenced at approx. 0730. Used 10 trucks to haul clay to Site. Kolb continued spreading soil in cap area starting working to the north and northeast of cap area. Continued spreading clay in crown area and on east side of berm. Attached sheepsfoot roller to dozer at approx. 1430, and compacted clay concurrently while spreading clay.

Moisture of clay being dumped on-Site is still very high (damp to moist). Using tracks of dozer to break up large clods of clay to smaller pieces less than 3-inches in diameter.

Bi-State Utilities continued work on installing a drainage inlet at the north end of the cap. Bi-State sawcut hole in pipe and install vertical conduit and drain grate. Bi-State contracted a bricklayer to build a vertical conduit to tie into the 36" drain. Upon completion of bricklaying, Bi-State place concrete grate pad on top of conduit. Did not backfill around drain-backhoe was offsite.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Approx. 800 cubic yards of clay from borrow site.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken:

7. Authorizations for out-of-scope work or directives received from Client: None

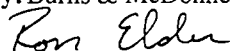
8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with clay
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC		1			SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
QA Engineer	TERR			1		SITE	

Certified By: Burns & McDonnell Engineering**Date:** 8/10/01**Signed:**

Bob Kuttles

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00023

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/2/01

REPORT PERIOD: Daily

DAY: Thursday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 90 - 100

PRECIPITATION: None

SKY: Clear

WIND: 00-10

ACTIVITY

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	BI-STATE	1				SITE	
Totals:		2	1	3	0		

Certified By: Burns & McDonnell Engineering

Date: 8/10/01

Signed: Ron Elder

Bob Kuttes

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00024

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/3/01

REPORT PERIOD: Daily

DAY: Friday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Overcast

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No construction activities today due to rain overnight. Will wait til Monday to resume activities.

Dropped by Site to drop off straw bales at drainage inlet for sedimentation control. Excavation around inlet has still not been backfilled.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None.

Certified By: Burns & McDonnell Engineering

Date: 8/10/01

Signed:

Ron Elder

Bob Kuttes

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00025**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 8/6/01**REPORT PERIOD:** Daily**DAY:** Monday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 90 - 100**PRECIPITATION:** None**SKY:** Clear**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Continued hauling clay to Site from clay borrow area in Illinois. Hauling activities commenced at approx. 0730. Used 10 trucks to haul clay to Site. Kolb continued spreading soil in cap area starting working to the north and northeast of cap area. Continued spreading clay in crown area and on east side of berm. Attached sheepsfoot roller to dozer at approx. 1400, and compacted clay concurrently while spreading clay.

Moisture of clay being dumped on-Site is still very high (damp to moist). Using tracks of dozer to break up large clods of clay to smaller pieces less than 3-inches in diameter.

Kolb used dozer to backfill the majority of the excavation around the drainage inlet to the north of the cap. Was unable to backfill material bordering the asphalt due to concerns in damaging the asphalt surface.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Approx. 800 cubic yards of clay from borrow site.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken:

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with clay
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC		1			SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering**Signed:** Bob Kuttles~~Bob Kuttles~~Ron Elder**Date:** 8/10/01

Burns & McDonnell Engineering

DAILY REPORT**No. 00026**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 8/7/01**REPORT PERIOD:** Daily**DAY:** Tuesday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Completed hauling clay to Site from clay borrow area in Illinois. Hauling activities commenced at approx. 0730. Used 8 trucks to haul clay to Site. Kolb spreading soil in northern section of cap area and also at south end where slope of cap begins. Attached sheepsfoot roller to dozer at approx. 1100, and compacted clay concurrently while spreading clay. Completed hauling clay to site at approx. 1230. Kolb spent the rest of the day grading and smoothing soil with dozer. Terracon is scheduled to come out tomorrow to perform compaction testing over the rest of the cap.

Bi-State Utilities was on-site at approx. 1230 to backfill remaining gravel material around drainage inlet on north side of cap. Bi-State brought a Bobcat on-site to backfill remaining excavation. Bi-State also installed 2 drainage grates on top of inlet. Placed straw bales around inlet after completion.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Approx. 400 cubic yards of clay from borrow site.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with clay
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer
Bobcat	BI-STATE	1		SITE	fill in excavation around drain inlet

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC	1				SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 8/10/01**Signed:** Bob Kuttles
Bob Kuttles Ron Elden

Burns & McDonnell Engineering

DAILY REPORT**No. 00027**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 8/8/01**REPORT PERIOD:** Daily**DAY:** Wednesday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 90 - 100**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Doug Waldier of Terracon on-Site at approx. 1355 to perform compaction testing of remaining clay cap that has been placed and compacted, and to collect Shelby tube samples for permeability tests. Les Weber of Kolb and Ron Elder of BMCD on-site to assist and observe compaction testing and collection of Shelby tubes for permeability. Les uses dozer bucket to push Shelby tubes in to the caly at an approx. 1-foot depth

2. Tests and/or control activities performed with references to specifications / plan requirements: Terracon performed 6 initial compaction tests to measure moisture density relationship in the compacted soil. Density results indicated compaction was meeting at least 95% requirement for all tests, with exception of one test. Compaction was close to 100% for all tests with the exception of the one failing test. Moisture was close to optimum or above for all tests. The one area with a failed test was re-rolled with the compactor and re-tested. The re-test for this area passed for both moisture and density.

Following compaction compaction tests, Terracon collected a total of 4 Shelby tube samples for permeability. Two tets will be run in the lab.

3. Test equipment calibrations: standard calibration of nuclear gauge performed by Terracon

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread waste
Sheepsfoot	KOLB	1		SITE	Compacts waste; attached to back of dozer

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC		1			SITE	
QA Engineer	TERR				1	SITE	
Totals:		1	1	1	0		

Certified By: Burns & McDonnell Engineering**Date:** 8/10/01**Signed:**

Ron Elder
Bob Kuttles
Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00028

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/9/01

REPORT PERIOD: Daily

DAY: Thursday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 90 - 100

PRECIPITATION: None

SKY: Overcast

WIND: 10-20

ACTIVITY

1. Work performed today (location, description, and by whom): Burdine & Associates on-Site at 0800 to survey top of compacted clay cover. Burdine established a 25-foot grid over the cap area and surveyed the waste footprint area where the waste limits were capped with clay to verify one-foot of cover over the entire berm. The survey did not include drainage swales outside of the waste boundaries. Burdine finished surveying activities at approx. 1045.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: Burdine calibrated total station prior to surveying activities.

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC	1				SITE	
Super	BURDINE					SITE	
Laborer	BURDINE			1		SITE	
Totals:		1	1	1	0		

Certified By: Burns & McDonnell Engineering

Date: 8/10/01

Signed:

Ron Elder

Bob Kuttles

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00029

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/10/01

REPORT PERIOD: Daily

DAY: Friday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Overcast

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to heavy rains late Thursday afternoon and awaiting results of permeability tests and survey results. Stopped by Site at 0900 to take photographs of completed clay cover.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Totals:		1	0	0	0		

Certified By: Burns & McDonnell Engineering

Signed: Ron Elder
Bob Kuttles

Ron Elder

Date: 8/10/01

Burns & McDonnell Engineering

DAILY REPORT

No. 00030

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/13/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Clear

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today...awaiting results of permeability tests and survey results. Bob Kuttles on-Site to inspect clay cap.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Totals:		1	0	0	0		

VISITORS

Time	Company	Visitor Name	Remarks
0900	Burns & McDonnell Engineering	Bob Kuttles	

Certified By: Burns & McDonnell Engineering

Date: 8/23/01

Signed:

Ron Elder

~~Bob Kuttles~~

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00031

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/14/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Clear

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today...awaiting results of permeability tests and survey results. Received survey data from Burdine & Associates, and forwarded data to CAD department in Kansas City to generate a topo map and create an isopach map showing clay cover thicknesses.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Totals:		1	0	0	0		

Certified By: Burns & McDonnell Engineering

Date: 8/23/01

Signed:

Ron Elder

Bob Kuttles

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00032

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/15/01

REPORT PERIOD: Daily

DAY: Wednesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today...awaiting results of permeability tests and survey results. Received isopach map from CAD department in Kansas City showing clay cover thicknesses. Isopach map revealed a few small areas where clay is less than 10 inches. Called Jeff Kolb and notified him that we need to import approx. 5 more truckloads of clay and re-survey the areas where clay is placed for verification.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken. None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Totals:		1	0	0	0		

Certified By: Burns & McDonnell Engineering

Date: 8/23/01

Signed:

Ron Elder

~~Bob Kuttles~~

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00033

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/16/01

REPORT PERIOD: Daily

DAY: Thursday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 70 - 80

PRECIPITATION: None

SKY: Overcast

WIND: 10-20

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today. Received permeability test results by phone from Doug Waldier of Terracon. According to Doug, both permeability test samples were at 1×10^{-8} cm/sec order of magnitude. Terracon will mail hard copy of test results. Reviewed isopach map from CAD department in Kansas City showing clay cover thicknesses. Isopach map was generated by subtracting the interpolated surface of the top of waste from the interpolated surface of the top of clay and assigned an arbitrary 25-foot by 25-foot grid system. The isopach map identified 12 points on the grid system where clay is less than 0.90 feet. Will try to arrange Kolb to have surveyor come on site while they fill in the areas less than 0.90 feet.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Totals:		1	0	0	0		

Certified By: Burns & McDonnell Engineering

Signed: Ron Elder
Bob Kuttles Ron Elder

Date: 8/23/01

Burns & McDonnell Engineering

DAILY REPORT

No. 00034

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/17/01

REPORT PERIOD: Daily

DAY: Friday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today. Receive updated isopach map of project area with site background referenced. Talked with Jeff Kolb. He said Les should be back on Site on Monday and will try to arrange to have surveyor on-Site to shoot elevations at the indentified low areas. Mentioned to Jeff that we want to use ridge of clay on east-northeast edge of cap outside of cap extents to fill in low spots, and emphasized that we do not want to use placed clay within the cap area.

2. Tests and/or control activities performed with references to specifications / plan requirements. None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Totals:		1	0	0	0		

Certified By: Burns & McDonnell Engineering

Date: 8/23/01

Signed:

Ron Elder

Bob Kuttles

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00035

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/20/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today. Talked to Les Weber with Kolb. He cannot schedule Burdine to locate low elevation spots until tomorrow. Identified two additional points less than 0.90 feet to be added to the coordinate lists generated by the K.C. CAD department. CAD will update the coordinate list to incorporate the additional points.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Totals:		1	0	0	0		

Certified By: Burns & McDonnell Engineering

Signed: Ron Elder
Bob Kuttles Ron Elder

Date: 8/23/01

Burns & McDonnell Engineering

DAILY REPORT

No. 00036

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/21/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No construction work performed today. Les Weber with Kolb said Burdine will be at the Site Thursday morning to locate areas less than 0.90 feet. Received updated map from the CAD group in our K.C. office showing coordinates for all 12 points indentified less than 0.90 feet. Points are shown on isopach and represent a grid reading every 25 feet. Faxed coordinate map to Kolb for their reference.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Totals:		1	0	0	0		

Certified By: Burns & McDonnell Engineering

Signed: Ron Elder
Bob Kuttles Ron Elder

Date: 8/23/01

Burns & McDonnell Engineering

DAILY REPORT

No. 00037

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/22/01

REPORT PERIOD: Daily

DAY: Wednesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No construction work performed today. Les Weber with Kolb said Burdine will be at the Site Thursday morning at 0700 to locate areas less than 0.90 feet.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Totals:		1	0	0	0		

Certified By: Burns & McDonnell Engineering

Signed: Ron Elder
~~Bob Kutler~~ Ron Elder

Date: 8/23/01

Burns & McDonnell Engineering

DAILY REPORT**No. 00038**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 8/23/01**REPORT PERIOD:** Daily**DAY:** Thursday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 70 - 80**PRECIPITATION:** Drizzle**SKY:** Overcast**WIND:** 10-20**ACTIVITY**

1. Work performed today (location, description, and by whom): Arrived on-Site at 0710. Les Weber with Kolb and surveyors with Burdine on-Site setting up survey equipment. Site received light rain overnight, and surface of clay is damp. Encountered slight rain during surveying and clay movement activities. Burdine spotted the 12 location identified less than 1-foot in thickness with the total station and placed a stake at each spot. Kolb marked the distance need to reach 1-foot at each stake based on the isopach map results. After staking and marking fill lines was complete, Les Weber operated the dozer to move excess clay to the low areas. Kolb used the ridge of soil on the east-northeast side of the cap, placed outside of the cap footprint, to cover the areas needing clay fill. Observed Kolb placing clay to fill lines at all 12 locations. Spread out clay in vicinity of each stke over an approximate 25-foot by 25-foot area to cover entire grid represented by low point.

Kolb also smoothed out area to south of the cap where stockpiles were formerly located. Les said they will not be able to schedule haul trucks and high lift for placement of topsoil until Monday morning.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: Burdine set up and calibrated total station for surveying low points.

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	CAT	SITE	spread clay in fill areas

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
QA Engineer	BMC	1				SITE	
Super	KOLB		1			SITE	
Surveyor	BURDINE		1			SITE	
Surveyor Asst.	BURDINE			1		SITE	
Totals:		1	2	1	0		

Certified By: Burns & McDonnell Engineering**Date:** 8/23/01

Signed: Ron Elder
~~Bob Kuttus~~ Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00039

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/24/01

REPORT PERIOD: Daily

DAY: Friday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 70 - 80

PRECIPITATION: Misty

SKY: Overcast

WIND: 10-20

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to rainy conditions
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

Certified By: Burns & McDonnell Engineering

Signed: Ron Elder
Bob Kuttles Ron Elder

Date: 9/18/01

Burns & McDonnell Engineering

DAILY REPORT

No. 00040

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/27/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to wet conditions from rain over the weekend. Les w/Kolb said trucks cannot back into the borrow area due to the wet soil. Will try to start activities on Tuesday or Wednesday.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None

Certified By: Burns & McDonnell Engineering

Signed: Ron Elder
Bob Kuttles Ron Elder

Date: 9/18/01

Burns & McDonnell Engineering

DAILY REPORT

No. 00041

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/28/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No work performed today due to wet conditions from rain over the weekend. Kolb mobilized a high lift to the Site, and prepared and cleared the area where topsoil will be excavated. Kolb has trucks scheduled to begin hauling soil at 0700 tomorrow.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None

Certified By: Burns & McDonnell Engineering

Signed:

Ron Elder

~~Bob Kuttles~~ *Ron Elder*

Date: 9/18/01

Burns & McDonnell Engineering

DAILY REPORT

No. 00042

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/29/01

REPORT PERIOD: Daily

DAY: Wednesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Clear

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): Arrived on Site at 0720. Kolb on-site spreading first couple of truckloads of topsoil. Topsoil is a yellowish brown silt with trace clay. Some roots are intermixed with the topsoil. Directed Kolb to remove large size roots from topsoil after placement. Also direct Kolb to spread topsoil along edge of asphalt on west side of cap to allow fencing contractor to place posts.

Kolb spread topsoil at both the cap area and the area south of the cap to minimize traffic congestion with the haul trucks. Alan moved back and forth spreading soil at each location. Spread approximately 4-inches of topsoil in the area outside of the cap. By the end of the day, approximately 25% of the cap area has been covered with topsoil. Approximately 1000 cubic yards of material was placed by end of day.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Approx. 1000 cubic yards of topsoil from borrow site.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with topsoil
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread topsoil

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC		1			SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering

Date: 9/18/01

Signed:

Ron Elder
Bob Kuttles

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00043**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 8/30/01**REPORT PERIOD:** Daily**DAY:** Thursday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 10-20**ACTIVITY**

1. Work performed today (location, description, and by whom): Arrived on Site at 0725. Kolb continued hauling and spreading topsoil. Kolb spreading soil on south-southwest end and working to the north-northeast. According to Les Weber, 107 truckloads of topsoil were hauled to Site yesterday (approx. 1000 cubic yards).

Bob Kuttles arrived on-Site at approx. 0930 to inspect topsoil material and placement activities. Discussed drainage issues with Les, specifically regarding the south side of the cap. Emphasized the importance of preventing ponding around cap after complete. Also discussed placement of gravel bed and fence posts along west edge of cap by asphalt.

Inspected the topsoil borrow area at Fort Belle Quarry at 1045. Borrow area is located on south end of quarry and access to borrow area is off of Lindbergh from 367 North. Kolb's high lift operator is excavating native soil from the ground surface south of the quarry. Soil is a yellowish brown silt with some clay and intermixed organics (roots).

Kolb used a total of 15 trucks to haul soil to the Site. Approximately another 1000 cubic yards of soil was hauled to the Site. At the end of the day, the sky became overcast, and winds picked up speed. Possible thunderstorms this evening. Depending on weather conditions, Kolb plans to continue hauling soil to the Site tomorrow.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Approx. 1000 cubic yards of topsoil from borrow site.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with topsoil
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread topsoil

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC		1			SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 9/18/01**Signed:***Ron Elder*~~Bob Kuttles~~*Ron Elder*

Burns & McDonnell Engineering

DAILY REPORT

No. 00043

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 8/30/01

REPORT PERIOD: Daily

DAY: Thursday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 10-20

ACTIVITY

VISITORS

Time	Company	Visitor Name	Remarks
0930	Burns & McDonnell Engineering	Bob Kuttles	site inspection; observe topsoil

Certified By: Burns & McDonnell Engineering

Date: 9/18/01

Signed:

Ron Elsher
~~Bob Kuttles~~ *Ron Elsher*

Burns & McDonnell Engineering

DAILY REPORT**No. 00044**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 8/31/01**REPORT PERIOD:** Daily**DAY:** Friday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Arrived on Site at 0725. Kolb continued hauling and spreading topsoil. Kolb spreading soil from south-southwest end toward the north-northeast.

Discussed drainage issues with Les regarding the east side of the cap. Went over plans and requested that the low point of the swale on the east side of the cap be a minimum of 10 feet from the fence. Discussed that the south end of swale along east side of cap may need to be built up slightly to achieve an adequate slope to drain water to the north.

Kolb used a total of 15 trucks to haul soil to the Site. Approximately another 1000 cubic yards of soil was hauled to the Site. By the end of the day, approximately 80% of the cap areas was covered with topsoil and 30% of area to the south was covered with topsoil. Kolb plans to resume hauling soil to the Site next Tuesday

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Approx. 1000 cubic yards of topsoil from borrow site.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with topsoil
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread topsoil

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC		1			SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 9/18/01

Signed: Ron Elder
Bob Kuttles Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00045

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 9/3/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No construction activities due to Labor Day holiday.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None

Certified By: Burns & McDonnell Engineering

Date: 9/18/01

Signed: Ron Elder
Bob Kuttles Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00046**9400 Ward Parkway
Kansas City, MO 64114**COMPANY:** Burns & McDonnell Engineering**DATE:** 9/4/01**REPORT PERIOD:** Daily**DAY:** Tuesday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Arrived on Site at 0735. Kolb continued hauling and spreading topsoil at remaining areas of cap and area south of cap.

Kolb started using 12 trucks to haul soil to the Site and finished with 5 trucks by the end of the day. Approximately 700 cubic yards of soil was hauled to the Site. By the end of the day, all of the cap area and area south of the cap was covered with topsoil. The area south of the cap was covered by approximately 4-inches of topsoil.

Kolb spent the last few hours of the day shaping up the topsoil layer and smoothing the surface, breaking up large clods of topsoil and evening out irregular surfaces. Discussed with Kolb that the west side of the berm needs to be flat along the length of the asphalt pavement, with no undulations

Les said surveyors are scheduled to survey top of topsoil layer on Thursday at 0700. I emphasized the importance of having everything prepared in time for survey on Thursday.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Approx. 700 cubic yards of topsoil from borrow site.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with topsoil
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread topsoil

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC		1			SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 9/18/01**Signed:***Ron Elder*
Bob Kuttes Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00047**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 9/5/01**REPORT PERIOD:** Daily**DAY:** Wednesday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Arrived on Site at 0800. Kolb not present on-Site. Called Les Weber; Les said dozer operator will not be on-Site until the afternoon. Discussed activities needed prior to survey including completing drainage swale on east side of berm approximately 10 feet from fence, rounding the crown of the cap to divert drainage along the centerline of the cap, and to smooth and even out the west side of the cap and eliminate undulations. Les also said he will be using Accurate Asphalt to place 4-foot wide gravel bed along the west edge by asphalt pavement.

Dozer operator arrived at 1300 to make final adjustments to cap. Created drainage swale along east fence and smoothed off west side of cap for remainder of the day. Will come out tomorrow morning to backdrag entire cap prior to survey. Two trucks of gravel was imported but not placed yet. Kolb said Accurate will place tomorrow..

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Two trucks of 3/4-inch minus gravel for rock bed.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with topsoil
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread topsoil

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB			1		SITE	
QA Engineer	BMC		1			SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 9/18/01**Signed:***Ron Elder*

Bob Kuttles

Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00048**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 9/6/01**REPORT PERIOD:** Daily**DAY:** Thursday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Arrived on Site at 0630. Kolb back dragged cap area to smooth surface. Survey crew on-site at 0700. Surveyed entire cap surface and drainage swales. Asked surveyors to designate points as either a cap or drainage point. During survey activities Kolb back dragged and smoothed area south of cap to create a smooth gently sloping surface. Surveyor will e-mail ASCII file with data points by tomorrow.

Accurate Asphalt on-Site at 0800 to spread gravel along west edge of cap flush with asphalt surface. Using a Bobcat with a 6-foot wide bucket to spread gravel. Used up all the gravel to spread approximately half the distance along pavement. Kolb ordered 2 more trucks of gravel, and Accurate placed the remaining gravel later in the day.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Two trucks of 3/4-inch minus gravel for rock bed.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
Bobcat loader	ACCURATE	1		SITE	Spread gravel bed
953 high lift	KOLB	1		BORROW	load trucks with topsoil
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread topsoil

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Operator (2)	ACCURATE					SITE	
Surveyor Asst.	BURDINE			1		SITE	
Super	KOLB		1			SITE	
QA Engineer	BMC	1				SITE	
Operator	KOLB			1	Oper	SITE	
Surveyor	BURDINE		1			SITE	
Totals:		1	2	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 9/18/01**Signed:** Ron Elder
~~Bob Kuites~~ Ron Elder

Burns & McDonnell Engineering

DAILY REPORT**No. 00049**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 9/7/01**REPORT PERIOD:** Daily**DAY:** Friday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Arrived on Site at 0830. Fencing contractor (Granite Inc.) arrived on-Site at approx. 0800. Granite marked post hole locations with spray paint on ten-foot centers. Discussed moving back fence on north side of cap approximately 10 feet so truck trailers can back up closer to edge of asphalt pavement. Discussed locations of both single gate and double swing gate.

Granite Inc. having difficulty digging holes to 3-foot depth. Encountering refusal at approx. 1.5 to 2 feet bgs. Due to problems encountered with auger, Granite Inc. decides to stop for the day and re-assess on Monday. A representative will be out on Monday to look at the site.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
Bobcat w/auger	GRANITE	1		SITE	Dig post holes

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Laborer	GRANITE			1		SITE	
Laborer (2)	GRANITE			1		SITE	
Super	GRANITE		1			SITE	
QA Engineer	BMC	1				SITE	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 9/18/01**Signed:***Ron Elder*
Bob Kuttles*Ron Elder*

Burns & McDonnell Engineering

DAILY REPORT

No. 00050

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 9/10/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No construction activities performed today. Receive survey data from Burdine via e-mail. Forward data to our CAD department in K.C. to generate an isopach map to verify a total of 2-feet of cap material placed over the top of waste. Will receive isopach map by tomorrow afternoon.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None.

Certified By: Burns & McDonnell Engineering

Signed:

Ron Elder

~~Bob Kuttles~~

Ron Elder

Date: 9/18/01

Burns & McDonnell Engineering

DAILY REPORT

No. 00051

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 9/11/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 80 - 90

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): No construction activities performed today. Received isopach map from our CAD department in the K.C. office. There are nine points within the cap area that are less than 2 feet in thickness. All the points are off by less than a few inches. Notify Kolb that we need to bring more topsoil in to fill in low spots. Kolb scheduled surveyor for 0700 tomorrow to resurvey. Kolb will bring in a few loads of topsoil to fill in the low spots prior to resurveying the topsoil.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: None.

Certified By: Burns & McDonnell Engineering

Signed:

Ron Elder

~~Bob Kuttes~~

Ron Elder

Date: 9/18/01

Burns & McDonnell Engineering

DAILY REPORT**No. 00052**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 9/12/01**REPORT PERIOD:** Daily**DAY:** Wednesday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 80 - 90**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Arrived on Site at 0650. Kolb is present on-Site but Burdine is not. Observe soil cap for first time since heavy rains hit the Site over the weekend. Observe a large ponding of water in a low spot of the drainage swale on the east side of the berm. The pond of water has been created by settlement at the neighboring property (USF Freightways) where runoff from their property has ponded in the swale generated to drain the cap. The drainage swale adjacent to this low spot on the neighboring property is also a low spot for drainage of the cap, and has water ponded in it. Instruct Kolb to fix swale slope to drain all stormwater runoff from the east side of the berm to the storm inlet on the north side of the cap and to build up a ridge of soil along the property fenceline to prevent stormwater runoff from USF Freightways from entering CNF's property and potentially flooding it.

Burdine called Kolb to tell them they would not be able to make it to the Site until tomorrow. Kolb spent the rest of the morning adjusting the swale slope to drain water to the drain inlet, and stockpiling more topsoil (approx. 10 truckloads) to spread in low spots tomorrow when surveyor arrives.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: Ten trucks of topsoil.

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
953 high lift	KOLB	1		BORROW	load trucks with topsoil
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread topsoil

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Super	KOLB		1			SITE	
QA Engineer	BMC	1				SITE	
Operator	KOLB			1	Oper	SITE	
Operator (2)	KOLB			1		BORROW	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 9/18/01

Signed: Ron Elcher
~~Bob Kuttles~~ Ron Elcher

Burns & McDonnell Engineering

DAILY REPORT**No. 00053**

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering**DATE:** 9/13/01**REPORT PERIOD:** Daily**DAY:** Thursday**PROJECT:** Environmental Cap Construction**JOB:****TEMPERATURE:** 70 - 80**PRECIPITATION:** None**SKY:** Prt Cloudy**WIND:** 00-10**ACTIVITY**

1. Work performed today (location, description, and by whom): Arrived on Site at 0815. Kolb on-Site but Burdine has not arrived yet. Burdine arrives on-site at 0830. Burdine sets up total station and places stakes at the coordinates indicated by the isopach map where total thickness of soil is less than 2 feet. Kolb uses topsoil that was piled on top of cap yesterday morning to spread in the low spots to achieve a 2-foot thickness. Following spreading of the soil, Burdine resurveyed the entire cap area, including the drainage swales. Burdine will e-mail survey data to me by the end of the week in order to generate an updated isopach to verify a 2-foot thick cover.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: Burdine calibrated total station prior to survey

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives recieved from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
D6H XL Dozer	KOLB	1	Caterpillar	SITE	Spread topsoil

FIELD FORCE LABOR

Category	Source	Supy.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Surveyor Asst.	BURDINE			1		SITE	
Super	KOLB		1			SITE	
QA Engineer	BMC	1				SITE	
Operator	KOLB			1	Oper	SITE	
Surveyor	BURDINE		1			SITE	
Totals:		1	2	2	0		

Certified By: Burns & McDonnell Engineering**Date:** 9/18/01**Signed:**Ron Elder~~Bob Kuttles~~Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00054

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 9/14/01

REPORT PERIOD: Daily

DAY: Friday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 70 - 80

PRECIPITATION: None

SKY: Prt Cloudy

WIND: 00-10

ACTIVITY

1. Work performed today (location, description, and by whom): Fencing contractor (Granite Inc.) arrived on-Site at approx. 0730. Granite marked post hole locations last week with spray paint on ten-foot centers. Granite has a different auger this week that should handle the soil and gravel better. After discussions with Marvin Allen and Rob Schmidt of CTS, decide to leave fence close to edge of asphalt where points were originally marked to prevent trucks from driving on gravel bed.

Granite drilled all the post holes along the edge of the asphalt in front of the maintenance building. One auger was destroyed in the process of drilling the holes. Granite tried drilling a few holes in the area cleared in the back of the property, but had no luck. Was consistently hitting refusal at 8 to 12 inches. Will try to drill or drive these posts tomorrow, and will drill and cement all corner posts. In the afternoon, a cement truck arrived on Site to fill in postholes while Granite set up posts. All posts were placed along edge of asphalt and cemented in with concrete by the end of the day. Granite will come back out tomorrow to drive posts in the back of the property.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: Site health and safety briefing.

EQUIPMENT

Description	Source	Units	Type	Work Area	Remarks
Bobcat w/auger	GRANITE	1		SITE	Dig post holes

FIELD FORCE LABOR

Category	Source	Supv.	Frmn.	Jrny.	Appr.	Work Area	Remarks
Laborer	GRANITE			1		SITE	
Laborer (2)	GRANITE			1		SITE	
Super	GRANITE		1			SITE	
QA Engineer	BMC	1				SITE	
Totals:		1	1	2	0		

Certified By: Burns & McDonnell Engineering

Date: 9/18/01

Signed: Ron Elder
~~Bob Kuttles~~ Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00055

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 9/17/01

REPORT PERIOD: Daily

DAY: Monday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 70 - 80

PRECIPITATION: Drizzle

SKY: Overcast

WIND: 10-20

ACTIVITY

1. Work performed today (location, description, and by whom): No construction activities performed today. Awaiting survey data from Burdine to generate revised isopach map for top of topsoil cover to verify 2-foot total thickness.
2. Tests and/or control activities performed with references to specifications / plan requirements: None
3. Test equipment calibrations: None
4. Off-site materials received: None
5. Materials shipped off-site: None
6. Decisions regarding acceptance of the work and/or corrective actions taken: None
7. Authorizations for out-of-scope work or directives recieved from Client: None
8. Job safety evaluations: None.

Certified By: Burns & McDonnell Engineering

Date: 9/18/01

Signed: Ron Elder
Bob Kuttas Ron Elder

Burns & McDonnell Engineering

DAILY REPORT

No. 00056

9400 Ward Parkway
Kansas City, MO 64114

COMPANY: Burns & McDonnell Engineering

DATE: 9/18/01

REPORT PERIOD: Daily

DAY: Tuesday

PROJECT: Environmental Cap Construction

JOB:

TEMPERATURE: 70 - 80

PRECIPITATION: Rain

SKY: Overcast

WIND: 10-20

ACTIVITY

1. Work performed today (location, description, and by whom): No construction activities performed today. Receive survey data from Burdine via e-mail. Forward data to our CAD department in K.C. to generate a revised isopach map to verify a total of 2-feet of cap material placed over the top of waste. Will receive isopach map by tomorrow afternoon.

Discussed fencing issues with Granite Inc. They are looking into renting a jack hammer device to attach to their Bobcat to try to chisel out holes for their posts.

2. Tests and/or control activities performed with references to specifications / plan requirements: None

3. Test equipment calibrations: None

4. Off-site materials received: None

5. Materials shipped off-site: None

6. Decisions regarding acceptance of the work and/or corrective actions taken: None

7. Authorizations for out-of-scope work or directives received from Client: None

8. Job safety evaluations: None.

Certified By: Burns & McDonnell Engineering

Signed:

Ron Elder

~~Bob Kuttles~~

Ron Elder

Date: 9/18/01



PHOTOGRAPHS



Spreading of Waste Material Using a Track-Mounted Loader



Placement and Spreading of Waste from Outside Cap Area

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 1 & 2
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Offsite Disposal Activities of Non-PCB Impacted Waste



Offsite Disposal Activities of Non-PCB Impacted Waste

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 3 & 4
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Dust Suppression Activities



Dust Suppression Activities

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 5 & 6
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Air Monitoring Sampling Pump



Placement and Spreading of Clay Layer (Looking North)

**Burns &
McDonnell**
SINCE 1898

**PHOTOGRAPHS 7 & 8
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI**



Placement and Spreading of Clay Layer (looking South)



Dumping and Spreading of Clay Over Top of Waste (Looking South)

**Burns &
McDonnell**
SINCE 1898

**PHOTOGRAPHS 9 & 10
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI**



Final Graded Top of Clay Surface



Final Graded Top of Clay Surface (Looking East)

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 11 & 12
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Maintaining Moisture at Surface of Clay Layer



Former Pile Location Outside of Cap Area (Looking East)

**Burns &
McDonnell**
SINCE 1898

**PHOTOGRAPHS 13 & 14
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI**



Placement and Spreading of Topsoil over Clay Layer (looking South)



Topsoil Borrow Area



PHOTOGRAPHS 15 & 16
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Grading of Topsoil Layer (Looking North)



Surveying Topsoil Layer Surface

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 17 & 18
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Placement of Gravel Bed Along West Side of Cap Area (Looking North)



Final Graded Surface with Drainage Paths (Looking North)

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 19 & 20
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Drainage Swale along East Side of Berm (Looking South)



Seeding and Strawing Activities

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 21 & 22
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Seeding and Strawing Activities Outside of Cap Area (Looking East)



Completed Seeding and Stawing Over Cap Area (Looking South)

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 23 & 24
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Installation of Silt Fencing for Erosion Control (Looking North)



Installation of Silt Fencing for Erosion Control (Looking South)

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 25 & 26
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Installation of Permanent Fencing Around Cap Area



Vegetative Cover Growth (Looking North)



**PHOTOGRAPHS 27 & 28
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI**



Vegetative Cover Growth of Cap Area and Area South of Cap



Vegetative Cover Growth of Cap Area (Looking South)

**Burns &
McDonnell**
SINCE 1898

PHOTOGRAPHS 29 & 30
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI



Fencing Installation around Extents of Former Stockpile Area



Former Stockpile Area (Looking East)

**Burns &
McDonnell**
SINCE 1898

**PHOTOGRAPHS 31 & 32
ENVIRONMENTAL CAP
CONSTRUCTION
CON-WAY CENTRAL EXPRESS
ST. LOUIS, MISSOURI**

APPENDIX B

**TOP OF WASTE AS-BUILT SURVEY
TOP OF CLAY LAYER AS-BUILT SURVEY
TOP OF TOPSOIL AS-BUILT SURVEY**

TOP OF WASTE AS-BUILT SURVEY



TOP OF CLAY LAYER AS-BUILT SURVEY

TOP OF TOPSOIL AS-BUILT SURVEY



APPENDIX C

**PRECONSTRUCTION MATERIAL EVALUATION TEST RESULTS
IN-PLACE MOISTURE AND DENSITY TEST RESULTS
IN-PLACE HYDRAULIC CONDUCTIVITY TEST RESULTS**

PRECONSTRUCTION MATERIAL EVALUATION TEST RESULTS

Laboratory Compaction Characteristics of Soil

2220 Welsch Industrial Ct
St. Louis, Missouri 63146
(314) 692-8811

Client Name: Dave Kolb Grading
Project Name: Conway Central Express
Location: St. Louis, MO

Project No.: 15011026 Date: 7/18/01

Source Material: Material picked up from borrow site at quarry
Sample Description: FAT CLAY: Black

TEST RESULTS

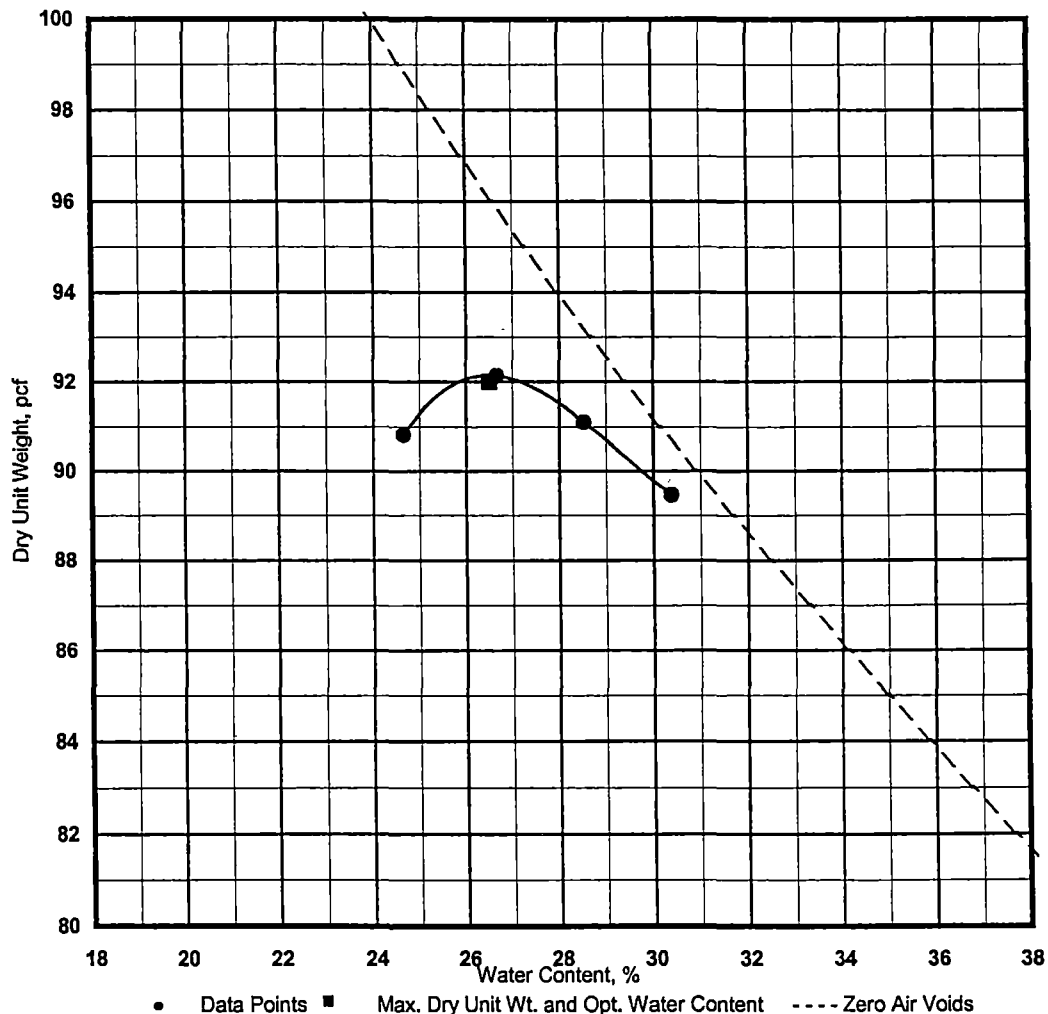
Maximum Dry Unit Wt.: 92.0 pcf
Optimum Water Content: 26.5 %

Material Designation: P-6 Sample date: 7/13/01
Test Method: ASTM D698
Test Procedure: A
Sample Preparation: dry
Rammer: Mechanical X Manual

Liquid Limit: 78 Plastic Limit: 27
Plasticity Index: 51
% passing # 200 sieve: 98

Reviewed by: *Doug Waldeier*
Doug Waldeier, E.I.T.

Zero air voids for specific gravity of 2.60



MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS
USING A FLEXIBLE WALL PERMEAMETER
ASTM D 5084 - 90 METHOD C TEST WITH INCREASING TAILWATER LEVEL
FLUID: DEAIRED TAP WATER WITH 0.005 N CaSO₄

PROJECT: CONWAY CENTRAL EXPRESS TERRACON JOB #: 15011026
SAMPLE ID: D 5084 DATE: 7/20/01
DESCR:

Durham Perm Cell
BURETTE Area 0.317 cm²

INITIAL
MOISTURE% **DENSITY**
W & T, g 43.29 WET WT, g 183.0
D & T, g 37.52 DIA, in 1.99 5.05 cm
T, g 16.52 HT, in 2.03 5.16 cm
AREA 20.07 cm²
MOIST-URE, % 27.5 **DENSITY: 110.4 PCF WET**
DENSITY: 86.6 PCF DRY

SPEC GRAV: 2.700 REMOLD (Y/N): NO
POROSITY, %: 48.6 PROCTOR: NA
SATURATION, %: 78.4 OPTIMUM: NA
VOID RATIO: 0.95 COMPACTION, %: 94.1
OVER OPTIMUM, %: 1.0

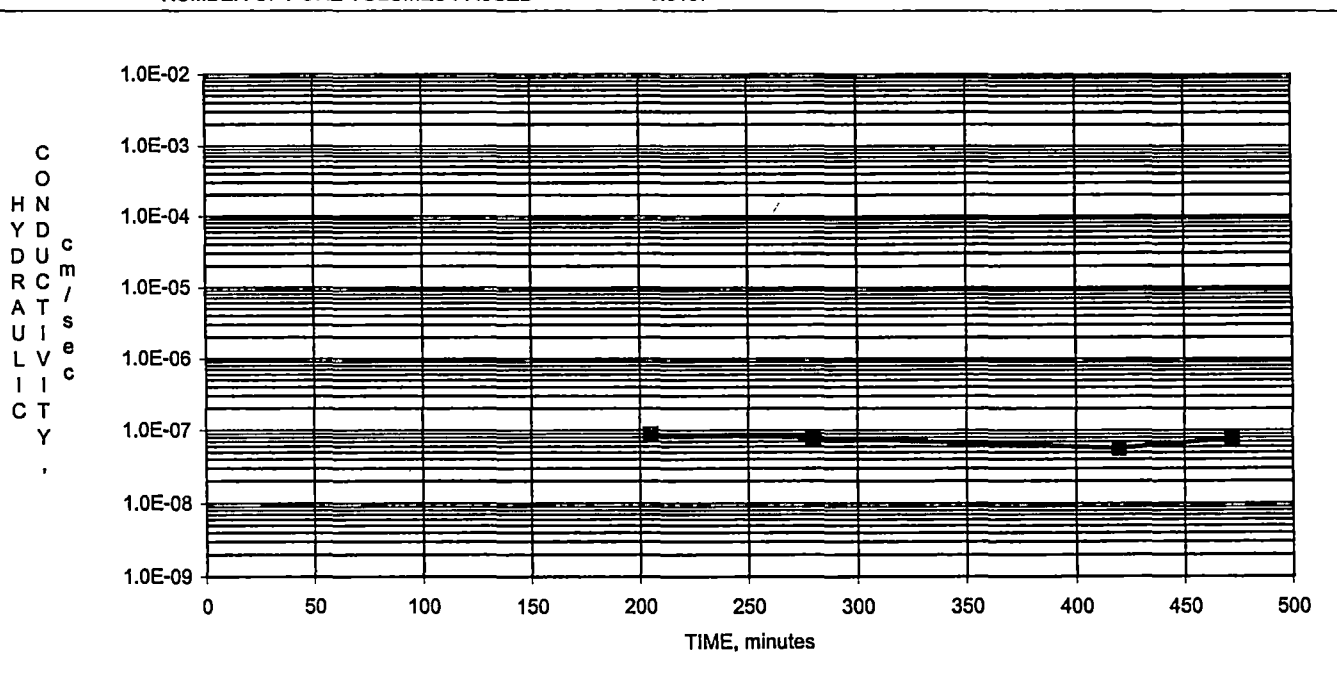
SATURATION: LATERAL PRESS.: 105.0 psi BACK PRESSURE (=UPPER=LOWER): 100.0 psi
TEST: LATERAL PRESS.: 105.0 psi UPPER: 100.0 psi LOWER: 100.0 psi
BIAS PRESSURE (=LOWER-UPPER) 0.0 psi

Upper cm ³	Lower cm ³	ELAPSED TIME min	DELTA H cm	Ln H1/H2	HYD CON k, cm/sec	OUT FLOW cm ³	IN FLOW cm ³	OUT/IN RATIO	HYD GRAD	% FROM MEAN k	TEMP.: C	TEMP CORR.:
7.2	71.6	0	64.4									
8.0	70.6	205	62.6	0.028348	8.74E-08	0.8	1.0	0.80	12.1	16	23	0.931
8.3	70.3	280	62.0	0.009631	7.90E-08	0.3	0.3	1.00	12.0	5	24	0.907
8.7	69.9	420	61.2	0.012987	5.71E-08	0.4	0.4	1.00	11.9	24	24	0.907
8.9	69.7	472	60.8	0.006557	7.76E-08	0.2	0.2	1.00	11.8	3	24	0.907

HYDRAULIC CONDUCTIVITY (k) = **AVERAGE 7.5E-08 cm/sec**

MAXIMUM	1.0E-03 TO 1.0E-04	2	0.75<	% < 25 AT
HYDRAULIC	1.0E-04 TO 1.0E-05	5	RATIO	> 1.0E-8
GRADIENT	1.0E-05 TO 1.0E-06	10	<1.25	OR
	1.0E-06 TO 1.0E-07	20		% < 50 AT
	1.0E-07 TO 1.0E-10	30		< 1.0E-8

NUMBER OF PORE VOLUMES PASSED = 0.0107



IN-PLACE MOISTURE AND DENSITY TEST RESULTS

Summary of Field Density Test Results

2220 Welsch Industrial Ct.
St. Louis, Missouri 63146
(314) 692-8811

Client Name: Dave Kolb Grading
Address: 5733 Westwood
St. Charles, MO 63304

Project Number: 15011026 Date of Report: 7/16/01

Laboratory Compaction Characteristics:

Test Method: ASTM D698

Project Name: Conway Central Express

Location: 8222 Hall Street

Datum: Compacted Trash Fill

Field Technician: 2743

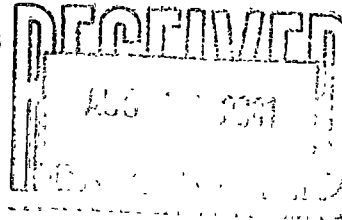
Gauge ID: 3850 Mode: 6"

Reviewed by: *Douglas A. Waldeier*

Douglas A. Waldeier, E.I.T.

Test No.	Date	Location	Lift or Elev.	Wet Unit Wt., pcf	Dry Unit Wt., pcf	Lab Max. Dry Unit Wt., pcf	% Lab Max Dry Unit Wt.	Req'd.% Lab Max Dry Unit Wt.	% Water Content	Req'd.% Water Content	Mat'l Designation
1	7/16/01	155' N. & 55' E. of the N.E. lot corner	0.0	122.5	111.0	104.0	100+	90.0	10.4	20.0	P-1
2	7/16/01	155' N. & 30' E. of the N.E. lot corner	0.0	119.0	103.6	104.0	100	90.0	14.8	20.0	P-1
3	7/16/01	155' N & 85' E. of the N.E. lot corner	0.0	123.7	116.7	104.0	100+	90.0	6.0	20.0	P-1
4	7/16/01	155' N. & 100' E. of the N.E. lot corner	0.0	129.0	116.0	104.0	100+	90.0	11.2	20.0	P-1

Summary of Field Density Test Results



2220 Welsch Industrial Ct.
St. Louis, Missouri 63146
(314) 692-8811

Client Name: Dave Kolb Grading
Address: 5733 Westwood
St. Charles, MO 63304

Project Number: 15011026 Date of Report: 8/1/01

Project Name: Conway Central Express
Location: 8222 Hall Street
Datum: 1" below final grade

Laboratory Compaction Characteristics:

Test Method: ASTM D698

Field Technician: 3992

Gauge ID: 3909 Mode: 10" D.T.

Reviewed by: *Douglas A. Waldeier*

Douglas A. Waldeier, E.I.T.

Test No.	Date	Location	Lift or Elev.	Wet Unit Wt., pcf	Dry Unit Wt., pcf	Lab Max. Dry Unit Wt., pcf	% Lab Max Dry Unit Wt.	Req'd.% Lab Max Dry Unit Wt.	% Water Content	Req'd.% Water Content	Mat'l Designation
5	8/1/01	100' N. & 50' E. of S.W. lot corner	1.0	120.6	96.6	92.0	100+	95.0	24.8	26.5	P-6
6	8/1/01	100' N. & 80' E. of S.W. lot corner	1.0	120.6	95.9	92.0	100+	95.0	25.7	26.5	P-6
7	8/1/01	140' N. & 110' E. of S.W. lot corner	1.0	120.1	95.4	92.0	100+	95.0	25.9	26.5	P-6
8	8/1/01	140' N. & 140' E. of S.W. lot corner	1.0	120.4	96.1	92.0	100+	95.0	25.3	26.5	P-6
9	8/1/01	110' N. & 140' E. of S.W. lot corner	1.0	115.6	89.8	92.0	98	95.0	28.8	26.5	P-6

Summary of Field Density Test Results

2220 Welsch Industrial Ct.
St. Louis, Missouri 63146
(314) 692-8811

Client Name: Dave Kolb Grading
Address: 5733 Westwood
St. Charles, MO 63304

Project Name: Conway Central Express
Location: 8222 Hall Street
Datum: Clay liner

Project Number: 15011026 Date of Report: 8/8/01

Laboratory Compaction Characteristics:

Test Method: ASTM D698

Field Technician: 3992

Gauge ID: 3850 Mode: 10" D.T.

Reviewed by: *Douglas A. Waldeier*

Douglas A. Waldeier, E.I.T.

Test No.	Date	Location	Lift or Elev.	Wet Unit Wt., pcf	Dry Unit Wt., pcf	Lab Max. Dry Unit Wt., pcf	% Lab Max Dry Unit Wt.	Req'd.% Lab Max Dry Unit Wt.	% Water Content	Req'd.% Water Content	Mat'l Designation
10	8/8/01	530' S. & 350' E. of N.W. lot corner	0.0	120.6	97.2	92.0	100+	95.0	24.1	26.5	P-1
11	8/8/01	350' S. & 230' E. of N.W. lot corner	0.0	120.9	94.7	92.0	100+	95.0	27.6	26.5	P-1
12	8/8/01	275' S. & 200' E. of N.W. lot corner	0.0	114.6	85.9	92.0	93	95.0	33.4	26.5	P-1
13	8/8/01	200' S. & 180' E. of N.W. lot corner	0.0	117.1	91.2	92.0	99	95.0	28.4	26.5	P-1
14	8/8/01	425' S. & 195' E. of N.W. lot corner	0.0	121.3	95.5	92.0	100+	95.0	27.0	26.5	P-1
15	8/8/01	300' S. & 215' E. of N.W. lot corner	0.0	119.0	92.4	92.0	100+	95.0	28.8	26.5	P-1
16	8/8/01	5' S. & 15' E. of N.W. lot corner	0.0	118.6	90.9	92.0	99	95.0	30.4	26.5	P-1

IN-PLACE HYDRAULIC CONDUCTIVITY TEST RESULTS

Terracon

2220 Welsch Industrial Drive
St. Louis, MO 63146
PHN (314) 692-8811
FAX (314) 692-8810

Date: August 20, 2001

Dave Kolb Grading
5733 Westwood
St. Charles, MO 63304

Attention: Mr. Jeff Kolb

Re: Conway Central Express

Job No: 15011026

We are transmitting ☒ herewith ☐ under separate cover : 1 copy of the

☐ Field Data ☒ Laboratory Data ☐ Report

Regarding:

- ☐ Compacted Fills
- ☐ Footings
- ☐ Drilled Piers
- ☐ Piles
- ☐ Concrete
- ☐ Asphalt
- ☐ Roofing
- ☐ Aggregate
- ☐ Non-destructive Testing of Steel
- ☐ Non-destructive Testing of Concrete

- ☐ Boring Logs
- ☐ Location Diagram
- ☐ Soil Samples
- ☐ Rock Core Samples
- ☐ Construction Material Samples
- ☐ Moisture-Density
- ☐ Consolidation
- ☐ Triaxial Compression
- ☒ Permeability
- ☐ Field Boring Log
- ☐ Grain Size Analysis


- ☐ Geologic Report of
 - ☐ Seismic Survey
 - ☐ Resistivity Survey
 - ☐ Site Rock Conditions
 - ☐ Aggregate Development
- ☐ General Information
 - ☐ Technical Expertise
 - ☐ Resumes
 - ☐ Other
- ☐ Report will follow under separate cover

On-site observation services were provided ☐ Full time ☒ Part time

We have not been asked to interpret the data or to make design and/or construction recommendations based on the data, and cannot assume responsibility or liability for interpretation of this data by others.

Remarks: Enclosed are the permeability tests for the Conway Central Express fill tested on 8/8/01.

Respectfully submitted,
TERRACON



Doug Waldeier, E.I.T.

Copies to: Ron Elder Burns & McDonnell

MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS

USING A FLEXIBLE WALL PERMEAMETER

ASTM D 5084 - 90 METHOD C TEST WITH INCREASING TAILWATER LEVEL

FLUID: DEAERATED TAP WATER WITH 0.005 N CaSO₄

PROJECT: CONWAY CENTRAL EXPRESS TERRACON JOB #: 15011026
 SAMPLE 200' South & 180' East of NW lot corner DATE: 8/15/01
 ID: B-3
 DESCR.: FAT CLAY, DARK OLIVE GRAY WITH VERY DARK GRAY

Durham Perm Cell
 BURETTE Area 0.317 cm²

INITIAL					
MOISTURE%	DENSITY				
W & T, g	56.06	WET WT, g	422.3		
D & T, g	47.38	DIA, in	2.87	7.30	cm
T, g	16.38	HT, in	2.10	5.34	cm
		AREA	41.85		cm ²
MOIST- URE, %	28.0	DENSITY:	117.9	PCF WET	
		DENSITY:	92.1	PCF DRY	

SPEC GRAV: 2.700 REMOLD (Y/N): NO
 POROSITY, %: 45.4 PROCTOR: 92.0
 SATURATION, %: 91.0 OPTIMUM: 26.5
 VOID RATIO: 0.83 COMPACTION, %: 100.1
 OVER OPTIMUM, %: 1.5

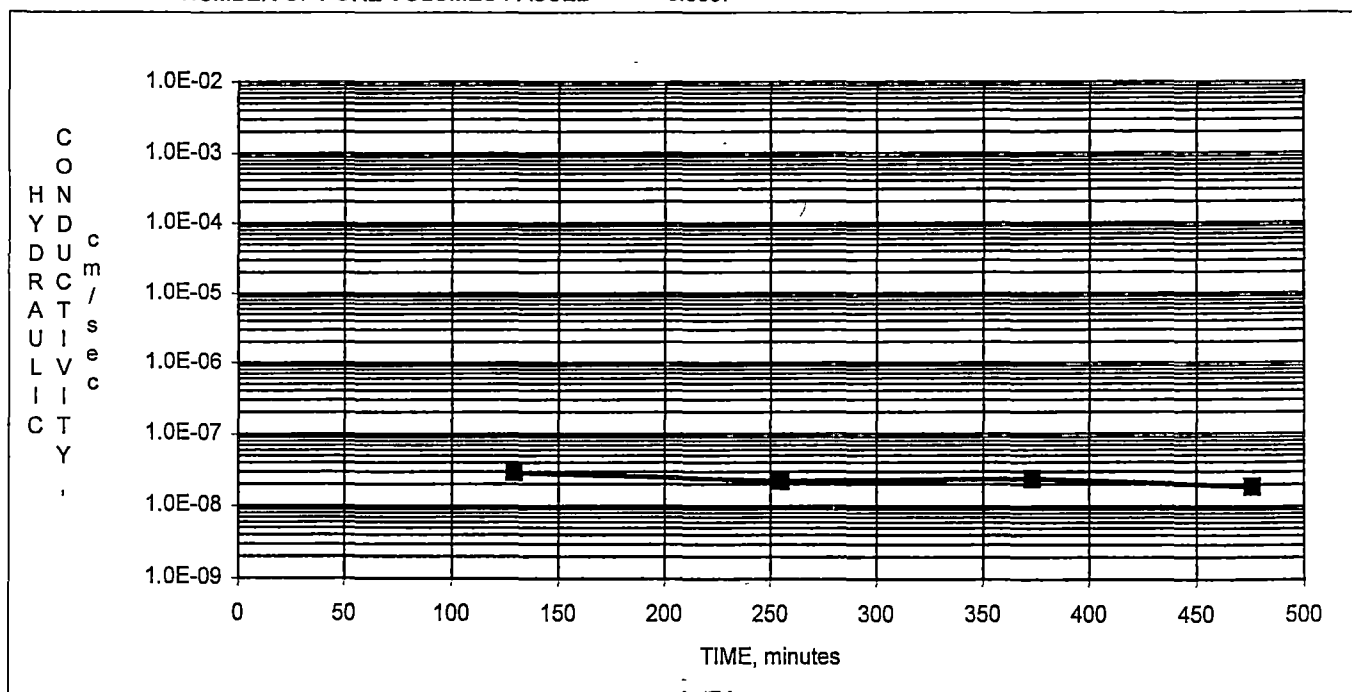
SATURATION:	LATERAL PRESS.: 105.0 psi	BACK PRESSURE (=UPPER=LOWER): 100.0 psi
TEST:	LATERAL PRESS.: 105.0 psi	UPPER: 100.0 psi LOWER: 100.0 psi
		BIAS PRESSURE (=LOWER-UPPER) 0.0 psi

Upper cm ³	Lower cm ³	ELAPSED TIME, min	DELTA H cm	Ln H1/H2	HYD CON k, cm/sec	OUT FLOW cm ³	IN FLOW cm ³	OUT/IN RATIO	HYD GRAD	% FROM MEAN k	TEMP. C	TEMP. CORR.:
3.5	71.6	0	68.1									
3.9	71.2	129	67.3	0.011817	2.88E-08	0.4	0.4	1.00	12.6	23	23	0.931
4.2	70.9	255	66.7	0.008955	2.23E-08	0.3	0.3	1.00	12.5	5	23	0.931
4.5	70.6	373	66.1	0.009036	2.40E-08	0.3	0.3	1.00	12.4	3	23	0.931
4.7	70.4	476	65.7	0.006070	1.85E-08	0.2	0.2	1.00	12.3	21	23	0.931

HYDRAULIC CONDUCTIVITY (k) = AVERAGE 2.3E-08 cm/sec

MAXIMUM 1.0E-03 TO 1.0E-04 2 0.75< % < 25 AT
 HYDRAULIC 1.0E-04 TO 1.0E-05 5 RATIO > 1.0E-8
 GRADIENT 1.0E-05 TO 1.0E-06 10 OR
 1.0E-06 TO 1.0E-07 20 % < 50 AT
 1.0E-07 TO 1.0E-10 30 < 1.0E-8

NUMBER OF PORE VOLUMES PASSED = 0.0037



**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS
USING A FLEXIBLE WALL PERMEAMETER**

ASTM D 5084 - 90 METHOD C TEST WITH INCREASING TAILWATER LEVEL

FLUID: DEAIRED TAP WATER WITH 0.005 N CaSO₄

PROJECT CONWAY CENTRAL EXPRESS TERRACON JOB #: 15011026
SAMPLE 530' South & 350' East of NW lot corner DATE: 8/15/01
ID: B-1
DESCR.: FAT CLAY TRACE GRAVEL, VERYDARK GRAY TRACE OLIVE BROWN

Durham Perm Cell
BURETTE Area 0.317 cm²

INITIAL				
MOISTURE%	DENSITY			
W & T, g 63.27	WET WT, g 399.6			
D & T, g 53.71	DIA, in 2.86	7.26	cm	
T, g 17.16	HT, in 2.02	5.13	cm	
	AREA	41.36	cm ²	
MOIST-URE, % 26.2	DENSITY: 117.7	PCF WET		
	DENSITY: 93.3	PCF DRY		

SPEC GRAV: 2.700 REMOLD (Y/N): NO
POROSITY, %: 44.7 PROCTOR: 92.0
SATURATION, %: 87.5 OPTIMUM: 26.5
VOID RATIO: 0.81 COMPACTION, %: 101.4
OVER OPTIMUM, %: -0.3

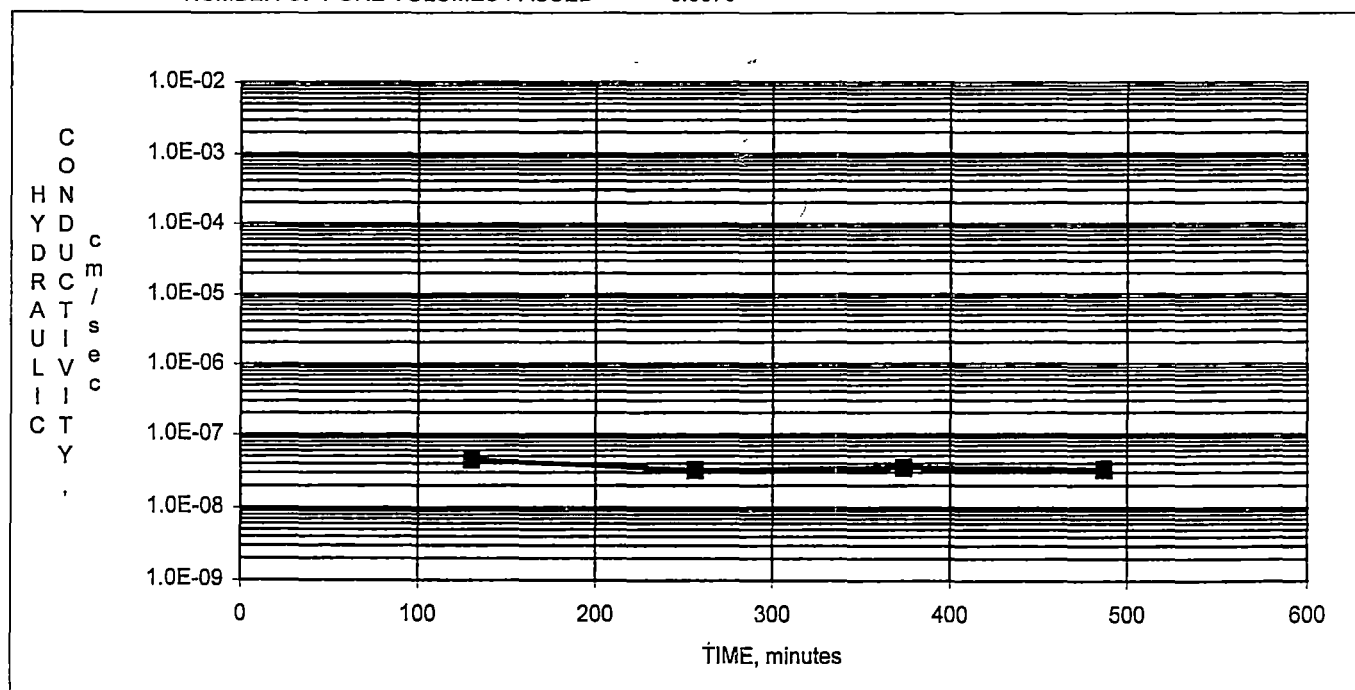
SATURATION:	LATERAL PRESS.: 105.0 psi	BACK PRESSURE (=UPPER=LOWER): 100.0 psi
TEST:	LATERAL PRESS.: 105.0 psi	UPPER: 100.0 psi LOWER: 100.0 psi
		BIAS PRESSURE (=LOWER-UPPER) 0.0 psi

Upper cm ³	Lower cm ³	ELAPSED TIME, min	DELTA H cm	Ln H1/H2	HYD CON k, cm/sec	OUT FLOW cm ³	IN FLOW cm ³	OUT/IN RATIO	HYD GRAD	% FROM MEAN k	TEMP: C	TEMP CORR.:
3.3	72.3	0	69.0									
4.0	71.7	130	67.7	0.019020	4.46E-08	0.7	0.6	1.17	13.2	23	23	0.931
4.5	71.3	256	66.8	0.013383	3.24E-08	0.5	0.4	1.25	13.0	11	23	0.931
5.0	70.9	374	65.9	0.013565	3.50E-08	0.5	0.4	1.25	12.9	3	23	0.931
5.4	70.5	487	65.1	0.012214	3.29E-08	0.4	0.4	1.00	12.7	9	23	0.931

HYDRAULIC CONDUCTIVITY (k) = **AVERAGE 3.6E-08 cm/sec**

MAXIMUM	1.0E-03 TO 1.0E-04	2	0.75<	% < 25 AT
HYDRAULIC	1.0E-04 TO 1.0E-05	5	RATIO	> 1.0E-8
GRADIENT	1.0E-05 TO 1.0E-06	10	<1.25	OR
	1.0E-06 TO 1.0E-07	20		% < 50 AT
	1.0E-07 TO 1.0E-10	30		< 1.0E-8

NUMBER OF PORE VOLUMES PASSED = 0.0070





APPENDIX D

WASTE MANIFESTS AND DISPOSAL SCALE TICKETS

KOL0038
BTC001-1Ticket: (16)
Date :
Time In :040519
9 Jul 01
8:50 am
9:10 am00 Gross Weight 86,900.00 LB
Tare Weight 28,280.00 LB
Net Weight 58,620.00 LB

29.31 TN

KOLB GRDING
5733 WESTWOOD
ST CHARLES, MO 63304

02238

Contract: 3988

Reference:

Vehicle: 2182KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Wayne Elliott 2182/39353

7

KOL0038
BTC001-1Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Ron Elder "as an agent of CNF" Date 7/9/01

Transporter Name- Beelman Trucking Truck # 2182

Driver Signature Wayne Elliott Date 7/9/01

Landfill Signature [Signature] Date 7/9/01

Quantity 29.31 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy Yellow Landfill White

2182/39353

Superior Oak Ridge Landfill
1741 Sulphur Springs Rd
Baltimore, MD 63021
63-225-7226

Ticket:

Date:

Time In:

040521

9 Jul 01

9:02 am

9:12 am

00 Gross Weight 84,200.00 LB
Tare Weight 27,650.00 LB
Net Weight 56,540.00 LB 28.27 TN

OF E KOLB GRDING
5733 WESTWOOD
ST CHARLES, MO 63304

000238
Contract: 3988
Reference:
Vehicle:

2KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Ally L. Williams

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Ron Elden "as an agent of CNF" Date 7/9/01Transporter Name- Beelman Trucking Truck # 2Driver Signature *Ally L. Williams* Date 7/9/01Landfill Signature *[Signature]* Date 7/9/01Quantity 28.27 (Tons)Bill To Kolb Grading

JUL-23-2001 09:48

BEELMAN

1 618 768 4304 P.19/22

Superior Oak Ridge Landfill
41 Sulphur Springs Rd
Ballwin, MO 63021
636-225-7220

Ticket: (18)
Date :
Time In :

040527 KOL0038
9 Jul 01 BT0001-1
9:22 am
9:30 am

00 Gross Weight 83,880.00 LB
Tare Weight 27,920.00 LB
Net Weight 55,960.00 LB

(2156-3921)
27.98 TN

IVE KOLB GRDING
33 WESTWOOD
ST. CHARLES, MO 63304

00238
Contract: 3988
Reference:
Vehicle:

2156KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

[Signature]

7.00

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature *[Signature]* of CNF Date 7/9/01

Transporter Name- Beelman Trucking Truck # 2156

Driver Signature *[Signature]* Date 7/9/01

Landfill Signature *[Signature]* Date 7/9/01

Quantity 27.98 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

JUL-23-2001 09:48

BEELMAN

1 618 768 4304 P.20/22

Superior Oak Ridge Landfill
41 Sulphur Springs Rd
Ballwin, MO 63021
636-225-7220

Ticket: (19)

Date:

Time In:

040535

9 Jul 01

9:28 am

9:38 am

Gross Weight 75,040.00 LB
Tare Weight 27,880.00 LB
Net Weight 47,160.00 LB

1145/3919
23.58 TN

VE KOLB GRDING
33 WESTWOOD
ST. CHARLES, MO 63304

00238

Contract: 3988

Reference:

Vehicle: 1145KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Robert J. Huddell

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature *Tom Elden* "as an agent of CNF" Date 7/9/01

Transporter Name- Beelman Trucking Truck # 1145

Driver Signature *Robert J. Huddell* Date 7/9/01Landfill Signature *[Signature]* Date 7/9/01

Quantity 23.58 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

JUL-23-2001 09:49

BEELMAN

1 618 768 4304 P.21/22

Superior Oak Ridge Landfill
7 Sulfur Springs Rd
Allwin, MO 63021
314-225-7220

Ticket: (20)

Date:

Time In:

040539

9 Jul 01

9:41 am

9:54 am

KOL0038

MIL003-1

00 Gross Weight 55,000.00 LB
Tare Weight 29,980.00 LB
Net Weight 25,020.00 LB

27.51 TN

A KOLB GRDING
7 WESTWOOD
T. CHARLES, MO 63304

0 1238
Contract: 3988
Reference:
Circle: 906KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Fred Miller #906/907

7.00

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

KOL0038
MIL003-1

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature *Tom Elia* "as an agent of CNF" Date 7/9/01

Transporter Name- Beelman Trucking Truck # 906

Driver Signature *Fred Miller* Date 7/9/01

Landfill Signature *Tom Elia* Date 7/9/01

Quantity 27.51 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy Yellow Landfill-White

Superior Oak Ridge Landfill
141 Sulphur Springs Rd
Pawlin, MO 63021
555-225-7210

Ticket: 040544
Date: 9 Jul 01
Time In: 10:02 am
10:11 am

00 Gross Weight 84,080.00 LB
Tare Weight 28,040.00 LB
Net Weight 56,040.00 LB 28.02 TN

VE KOLA GRADING
33 WESTWOOD
ST. CHARLES, MO 63304

00238
Contract: 3908

Reference:
Title: 21581018
KOLA

Rich Malt
2158
3911

Description	Rate	Tax	Total
-------------	------	-----	-------

Contaminated Soil			
-------------------	--	--	--

Net Amount:
Tendered:

Driver

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation
Generator Location- 8390 Hall Street
St. Louis County Permit 3962 Expires 10-31-2001
Description of Waste- Excavated Debris
Generator Signature Tom Elden "as an agent of CNF" Date 7/9/01
Transporter Name- Beelman Trucking Truck # 2158
Driver Signature *Rich Malt* Date 070901
Landfill Signature _____ Date 7/9/01
Quantity ~~28.02~~ 28.02 (Tons)
Bill To Kolo Grading

JUL-23-2001 09:49

BEELMAN

1 618 768 4304 P.22/22

Superior Oak Ridge Landfill
1711 Sulfur Springs Rd
Ballwin, MO 63021
631-225-7220

KOL0038
BTCC01-1

Ticket: (21)
Date :
Time In :

040573
9 Jul 01
11:01 am
11:01 am

DA E KOLB GRDING
ST. 3 WESTWOOD
ST. CHARLES, MO 63304

00 Gross Weight 76,860.00 LB
Stored Tare Weight 28,280.00 LB
Net Weight 48,580.00 LB 24.29 TN

0238
Contract: 3988
Reference:
Vehicle: 2182KDLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver Wayne Elliott 2182/39353 7

KOL0038
BTCC01-1

(21)

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Ron Eld "as an agent of CNF" Date 7/19/01

Transporter Name- Beelman Trucking Truck # 2182

Driver Signature Wayne Elliott Date 7/19/01

Landfill Signature Da Sh Date 7/19/01

Quantity 24.29 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy Yellow Landfill White

TOTAL P.22

Superior Oak Ridge Landfill
41 Sulphur Springs Rd
Ballwin, MO 63021
636-225-7220

Ticket: (S) 040574
Date: 9 Jul 01
Time In: 11:04 am
11:04 am

00 Gross Weight 77,920.00 LB
Stored Tare Weight 28,080.00 LB
Net Weight 49,840.00 LB 24.92 TN

VE KOLB GRDING
33 WESTWOOD
ST. CHARLES, MO 63304

00238
Contract: 3988
Reference:
Vehicle:

2KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver Al T. Williams

RELIVER
BROCK-1
Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Don Elder as an agent of CNF Date 7/9/01

Transporter Name- Beelman Trucking Truck # 2

Driver Signature Al T. Williams Date 7/9/01

Landfill Signature [Signature] Date 7/9/01

Quantity 24.92 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

JUL-23-2001 09:46

BEELMAN

1 618 768 4304 P.10/22

Superior Oak Ridge Landfill
141 Sulphur Springs Rd;
Ballwin, MO 63021
675-225-7220

Ticket: (9)
Date :
Time In :

040583
9 Jul 01
11:22 am
11:22 am

00 Gross Weight 77,200.00 LB
Stored Tare Weight 27,920.00 LB
Net Weight 49,280.00 LB

2156-3921
24.64 TN

DVE KOLB GRDING
533 WESTWOOD
ST. CHARLES, MO 63304

0238
Contract: 3988
Reference:
Vehicle: 2156KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver *[Signature]*

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature *[Signature]* "as an agent of CNF" Date 7/9/01

Transporter Name- Beelman Trucking Truck # 2156

Driver Signature *[Signature]* X Date 7/9/01

Landfill Signature *[Signature]* Date 7/9/01

Quantity 24.64 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

Superior Oak Ridge Landfill
141 Sulphur Springs Rd
Ballwin, MO 63021
616-225-7220

Ticket: (10)

040588

Date :

9 Jul 01

Time In :

11:28 am

11:28 am

00 Gross Weight 77,960.00 LB
Stored Tare Weight 27,880.00 LB
Net Weight 50,080.00 LB

1145/3919

25.04 TN

IVE KOLB GRDING
5733 WESTWOOD
ST. CHARLES, MO 63304

00238

Contract: 3988

Reference:

Vehicle: 1145KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:

Tendered:

Driver

Robbie D. Hill

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature *Ron Elden* is an agent of CNF Date 7/9/01

Transporter Name- Beelman Trucking Truck # 1145

Driver Signature *Robbie D. Hill* Date 7/9/01Landfill Signature *[Signature]* Date 7/9/01

Quantity 25.04 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

JUL-23-2001 09:46

BEELMAN

1 618 768 4304 P.12/22

Superior Oak Ridge Landfill
7 Sulphur Springs Rd
Ballwin, MO 63021
312-225-7820

Ticket: (11)

Date:

Time In:

040603

9 Jul 01

11:55 am

11:55 am

906 KOLB GRDING
57 WESTWOOD
ST. CHARLES, MO 63304

0238
Contract: 3988
Reference:
Article:

906KOLB
KOLB

00 Gross Weight 79,880.00 LB
Stored Tare Weight 29,980.00 LB
Net Weight 49,900.00 LB 24.95 TN

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Fred Miller #906/907

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 6390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature *Ron Elden* "as an agent of CNF" Date 7/9/01

Transporter Name- Beelman Trucking Truck # 906

Driver Signature x *Fred Miller #906* Date 7/9/01

Landfill Signature *[Signature]* Date 7/9/01

Quantity 24.58 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

Superior Oak Ridge Landfill
441 Sulphur Springs Rd
Ballwin, MO 63021
636-225-7220

Ticket: 040604
Date: 9 Jul 01
Time In: 11:56 am
11:56 am

00 Gross Weight 78,340.00 LB
Stored Tare Weight 28,040.00 LB
Net Weight 50,300.00 LB 25.15 TN

07E-KOLB GRDING
533 WESTWOOD
ST. CHARLES, MO 63304

00238
Contract: 3988
References:
Vehicle: 2158KOLB
KOLB

*Rich May 7
2158
3411*

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation
Generator Location- 8390 Hall Street
St. Louis County Permit 3988 Expires 10-01-2001
Description of Waste- Excavated Debris
Generator Signature [Signature] Date 7/19/01
Transporter Name- Deelman Trucking Truck # 2158
Driver Signature [Signature] Date 7/19/01
Landfill Signature [Signature] Date 7/19/01
Quantity 25.15 (Tons)
Bill To Kolb Grading

JUL-23-2001 09:46

BEELMAN

1 618 768 4304 P.13/22

Superior Oak Ridge Landfill
7 Sulfur Springs Rd
Hallwin, MO 63021
313-225-7220

Ticket: (12)

040622

Date :

9 Jul 01

Time In :

12:54 pm

12:54 pm

Gross Weight 78,280.00 LB
Stored Tare Weight 28,280.00 LB
Net Weight 50,000.00 LB

25.00 TN

2182 KOLB GRDING
173 WESTWOOD
ST. CHARLES, MO 63304

01238
Contract: 3988
Reference:
Vehicle:

2182KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Wayne Elliott 2182139353

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Tom Elden as an agent of CNF Date 7/9/01

Transporter Name- Beelman Trucking Truck # 2182

Driver Signature Wayne Elliott Date 7/9/01

Landfill Signature Tom Sell Date 7/9/01

Quantity 25.00 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill White

2182139353

JUL-23-2001 09:47

BEELMAN

1 618 768 4304 P.14/22

Superior Oak Ridge Landfill
 41 Sulphur Springs Rd
 Bailwin, MO 63021
 636-225-7220

KOL0038 Ticket:
 BTCL-1 Date:
 Time In:

(13)
 040627
 9 Jul 01
 1:01 pm
 1:01 pm

00 Gross Weight 81,760.00 LB
 Stored Tare Weight 28,080.00 LB
 Net Weight 53,680.00 LB 26.84 TN

VE KOLB GRDING
 33 WESTWOOD
 ST. CHARLES, MO 63304

00238
 Contract: 3988
 Reference:
 Vehicle:

2KOLB
 KOLB

Description	Rate	Tax	Total
-------------	------	-----	-------

Contaminated Soils			
--------------------	--	--	--

Net Amount:
 Tendered:

Driver *Pat Williams*

KOL0038
 BTCL-1
 Superior Oak Ridge Landfill, Inc.
 Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature *Ron Elden* "as an agent of CNF" Date 7/9/01

Transporter Name- Beelman Trucking Truck # 2

Driver Signature *Pat Williams* Date 7/9/01

Landfill Signature *P. A. S.* Date 7/9/01

Quantity 2684 (Tons)

Bill To Kolb Grading

Tractor # 2/HR # 31333

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

JUL-23-2001 09:44

BEELMAN

1 618 768 4304 P.02/22

Superior Oak Ridge Landfill
71 Sulphur Springs Rd
Hallwin, MO 63021
31225/7220

Ticket: 1
Date :
Time In :

040642

9 Jul 01

1:30 pm

1:46 pm

KOL0038

OWE0013

694/3976
00 Gross Weight 84,120.00 LB
Tare Weight 27,500.00 LB
Net Weight 56,620.00 LB

28.31 TN

DA KOLB GRDING
57 WESTWOOD
ST. CHARLES, MO 63304

0238
Contract: 3988
Reference:
Vehicle:

694KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver H. Pink

7.00

15
6.00
Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

KOL0038

OWE0013

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Ron Elden as an agent of CNF Date 7/19/01Transporter Name- Beelman Trucking Truck # 694Driver Signature David J. Overton Date 7/19/01Landfill Signature David J. Overton Date 7/19/01Quantity 28.31 (Tons)Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

7.00

Superior Oak Ridge Landfill
41 Sulphur Springs Rd
Ballwin, MO 63021
6-225-7220

Ticket: 14

Date :

Time In :

040641

9 Jul 01

1:33 pm

1:34 pm

KOL003:

BTC001-

WE KOLB GRDING
33 WESTWOOD

ST. CHARLES, MO 63304

00 Gross Weight 73,860.00 LB
Tare Weight 26,160.00 LB
Net Weight 47,700.00 LB

23.85 TN

48000

00238
Contract: 3988
Reference:
Vehicle:

1137KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

1137-4014

Driver

14

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Ron Elden as an agent of CNF Date 7/9/01

Transporter Name- Beelman Trucking Truck # 1137

Driver Signature [Signature] Date 7/9/01

Landfill Signature [Signature] Date 7/9/01

Quantity 23.85 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

Superior Oak Ridge Landfill
1741 Sulphur Springs Rd
Ballwin, MO 63021
636-225-7220

Ticket: 15
Date :
Time In :

040646
9 Jul 01
1:45 pm
1:45 pm

00 Gross Weight 79,400.00 LB
Stored Tare Weight 27,920.00 LB
Net Weight 51,480.00 LB

2156-3921
25.74 TN

DAVE KOLB GRDING
5733 WESTWOOD
CHARLES, MO 63304

000238
Contract: 3988
Reference:
Vehicle: 2156KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver *[Signature]*

15
Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

2156-3921

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Ron Elden "as an agent of CNF" Date 7/1/01

Transporter Name- Beelman Trucking Truck # 2156-3921

Driver Signature *[Signature]* Date 7/19/01

Landfill Signature *[Signature]* Date 7/19/01

Quantity 25.74 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

JUL-23-2001 09:44

BEELMAN

1 618 768 4304 P.03/22

Superior Oak Ridge Landfill
141 Sulphur Springs Rd
Ballwin, MO 63021
635-225-7220

Ticket: (2)
Date :
Time In :

040648
9 Jul 01
1:47 pm
1:47 pm

00 Gross Weight 79,080.00 LB
Stored Tare Weight 27,880.00 LB
Net Weight 51,200.00 LB

1145/3919
25.60 TN

DVE KOLB GRDING
533 WESTWOOD
ST. CHARLES, MO 63304

00238

Contract: 3988

Reference:

Vehicle: 1145KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Robbie J. Hutton

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature *Ron Elden* as an agent of CNF Date 7/9/01

Transporter Name- Beelman Trucking Truck # 1145

Driver Signature *Robbie J. Hutton* Date 07/09/01Landfill Signature *[Signature]* Date 7/9/01

Quantity 25.60 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

JUL-23-2001 09:44

BEELMAN

1 618 768 4304 P.04/22

Superior Oak Ridge Landfill
41 Sulphur Springs Rd
Ballwin, MO 63021
6-225-7220

Ticket: (3)

Date: 9 Jul 01

Time In: 2:07 pm

040664

2:18 pm

KOL0038
ST0001-1

00 Gross Weight 75,700.00 LB
Tare Weight 26,020.00 LB
Net Weight 49,680.00 LB

24.84 TN

IVE KOLB GRDING
33 WESTWOOD
ST. CHARLES, MO 63304

00238

Contract: 3988

Reference:

Vehicle: 1156KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

SLL-
255 PK MD Driver

7.00

(3)

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Ron Elder "as an agent of CNF" Date 7/9/01

Transporter Name- Beelman Trucking Truck # 1156

Driver Signature Harry M... Date 7/19/01

Landfill Signature [Signature] Date 7/19/01

Quantity 24.84 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

Superior Oak Ridge Landfill
1741 Sulphur Springs Rd -
Win, MO 63021
6-225-7220

Ticket: 4
Date :
Time In :

040665
9 Jul 01
2:21 pm
2:21 pm

00 Gross Weight 83,140.00 LB
Stored Tare Weight 29,980.00 LB
Net Weight 53,160.00 LB 26.58 TN

IVE KOLB GRDING
5733 WESTWOOD
CHARLES, MO 63304

000238
Contract: 3988
Reference:
Vehicle: 906KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver Fred Miller #906/907

#20

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Pam Elder "as an agent of CNF" Date 7/9/01

Transporter Name- Beelman Trucking Truck # 906

Driver Signature Fred Miller Date 7/9/01

Landfill Signature Sc. Smith Date 7/9/01

Quantity 26.58 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

Superior Oak Ridge Landfill
1741 Sulphur Springs Rd
Bollwin, MO 63021
636-225-7220

Ticket: 5
Date :
Time In :

040683
9 Jul 01
2:56 pm
2:56 pm

00 Gross Weight 76,020.00 LB
Stored Tare Weight 28,280.00 LB
Net Weight 47,740.00 LB 23.87 TN

48,000 lbs

LOVE KOLB GRADING
5733 WESTWOOD
ST. CHARLES, MO 63304

00238
Contract: 3988
Reference:
Vehicle: 2182KOLB
KOLB

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Wayne Elliott, 21821 39353

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street 48,000 lbs

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Ron Oden as an agent of CNF Date 7-9-01

Transporter Name- Beelman Trucking Truck # 2182

Driver Signature Wayne Elliott Date 7-9-01

Landfill Signature [Signature] Date 7-9-01

Quantity 23.87 (Tons)

Bill To Kolb Grading

Generator Copy-Pink Transporter Copy Yellow Landfill White

21821 39353

Superior Oak Ridge Landfill
 741 Sulphur Springs Rd
 Millwin, MO 63021
 314-225-7220

KOLO038
 BT0001

Ticket: (L)
 Date:
 Time In:

040688
 9 Jul 01
 3:02 pm
 3:02 pm

DALE KOLB GRADING
 5733 WESTWOOD
 ST CHARLES, MO 63304

00 Gross Weight 68,660.00 LB
 Stored Tare Weight 28,080.00 LB
 Net Weight 40,580.00 LB 20.29 TN

000238
 Contract: 3988
 Reference:
 Vehicle:

2KOLB
 KOLB

Description	Rate	Tax	Total
Contaminated Soils			

tractor # 2 / tr # 39333

Net Amount:
 Tendered:

Driver: *Mat Williams*

KOLO038 (L)
 BT0001
 Superior Oak Ridge Landfill, Inc.
 Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature *Don Elder* as an agent of CNF Date 7/9/01

Transporter Name- Beelman Trucking Truck # 2

Driver Signature *Mat Williams* Date 7/9/01

Landfill Signature *L. H.* Date 7/9/01

Quantity 20.29 (Tons)

Bill To Kolb Grading

tractor # 2 / tr # 39333

Generator Copy-Pink Transporter Copy-Yellow Landfill-White

Superior Oak Ridge Landfill
741 Sulphur Springs Rd
Win, MO 63021
225-7220

Ticket: 7
Date :
Time In :

040715
2 Jul 01
3:57 pm
3:58 pm

KOL0038
BTC001-

Gross Weight 67,700.00 LB
Tare Weight 27,840.00 LB
Net Weight 39,860.00 LB 19.93 TN
48,000

KOLB GRDING
733 WESTWOOD
CHARLES, MO 63304

2162/3645

000238
Contract: 3988
Reference:
Vehicle: 2162KOLB
KOLB

Conway Express, St Louis, MO ->
Superior Landfill
Purcell Park, MO

Description	Rate	Tax	Total
Contaminated Soils			

Net Amount:
Tendered:

Driver

Superior Oak Ridge Landfill, Inc.
Non-Hazardous Special Waste Manifest

Generator Name- CNF Transportation

Generator Location- 8390 Hall Street

St. Louis County Permit 3988 Expires 10-01-2001

Description of Waste- Excavated Debris

Generator Signature Ron Elder "is an agent of CNF" Date 7/9/01

Transporter Name- Beelman Trucking Truck # 2162

Driver Signature [Signature] Date 7/9/01

Landfill Signature [Signature] Date 7/9/01

Quantity 19.93 (Tons)

Bill To Kolb Grading

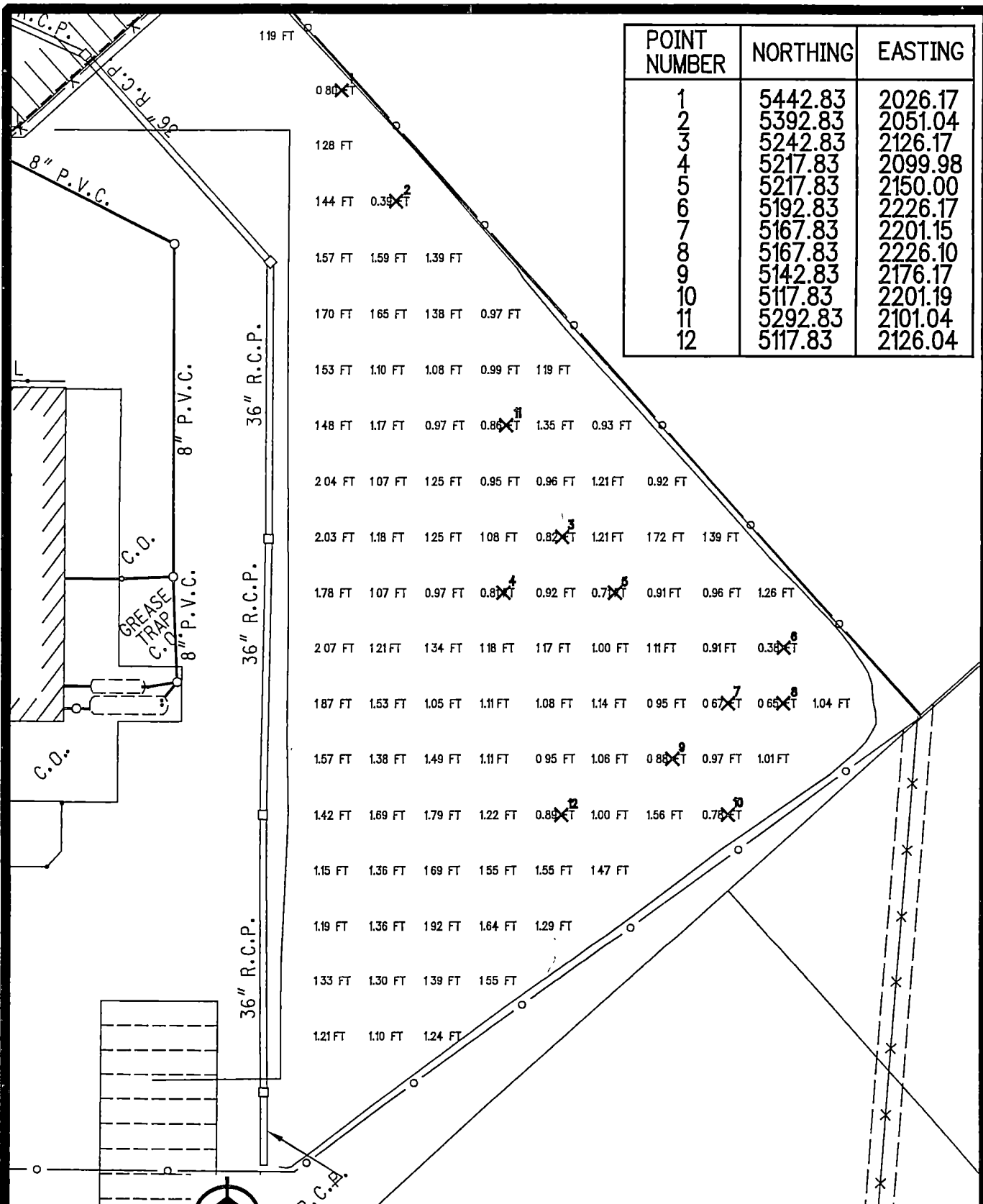
Generator Copy-Pink Transporter Copy-Yellow Landfill-White

APPENDIX E

**INITIAL AND FINAL CLAY LAYER ISOPACH MAPS
INITIAL AND FINAL CLAY PLUS TOPSOIL LAYER ISOPACH MAPS**

INITIAL AND FINAL CLAY LAYER ISOPACH MAPS

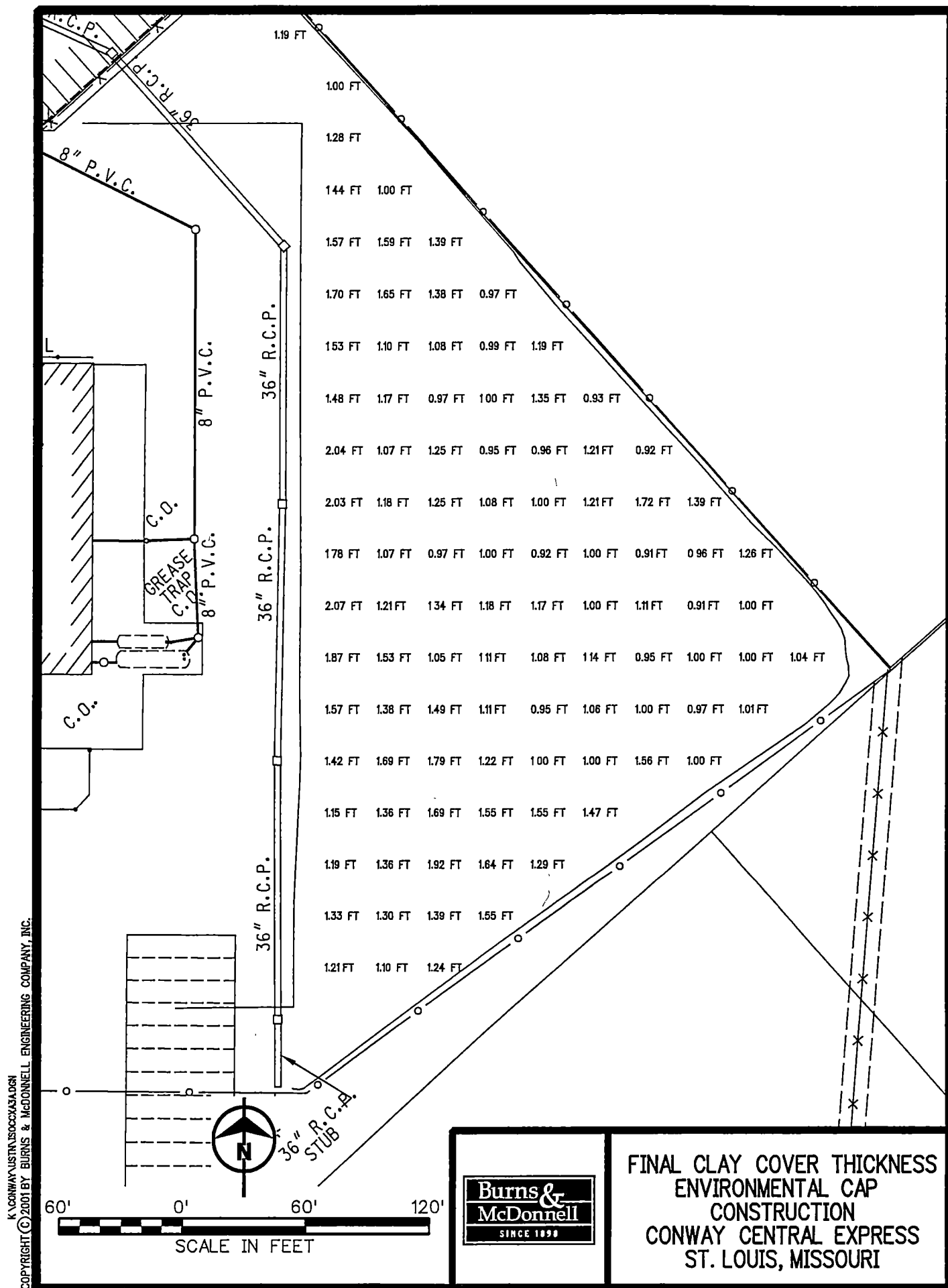
POINT NUMBER	NORTHING	EASTING
1	5442.83	2026.17
2	5392.83	2051.04
3	5242.83	2126.17
4	5217.83	2099.98
5	5217.83	2150.00
6	5192.83	2226.17
7	5167.83	2201.15
8	5167.83	2226.10
9	5142.83	2176.17
10	5117.83	2201.19
11	5292.83	2101.04
12	5117.83	2126.04



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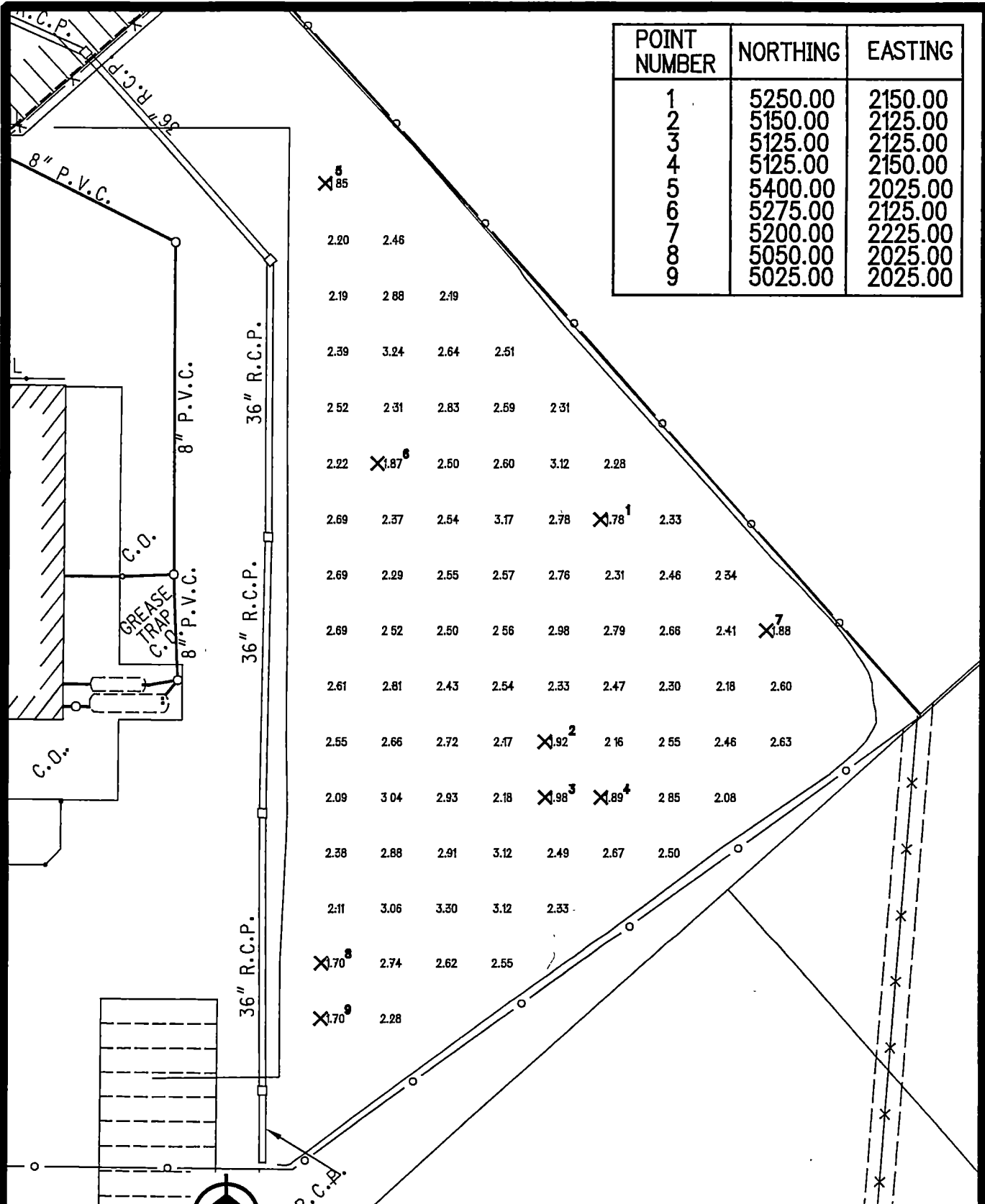
**Burns &
 McDonnell**
 SINCE 1898

INITIAL CLAY COVER THICKNESS
 ENVIRONMENTAL CAP
 CONSTRUCTION
 CONWAY CENTRAL EXPRESS
 ST. LOUIS, MISSOURI

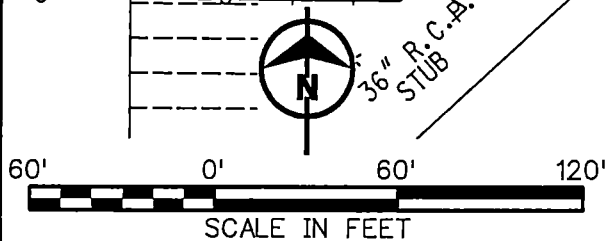


INITIAL AND FINAL CLAY PLUS TOPSOIL LAYER ISOPACH MAPS

POINT NUMBER	NORTHING	EASTING
1	5250.00	2150.00
2	5150.00	2125.00
3	5125.00	2125.00
4	5125.00	2150.00
5	5400.00	2025.00
6	5275.00	2125.00
7	5200.00	2225.00
8	5050.00	2025.00
9	5025.00	2025.00



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INITIAL CLAY
 PLUS TOPSOIL THICKNESS
 ENVIRONMENTAL CAP
 CONSTRUCTION
 CONWAY CENTRAL EXPRESS
 ST. LOUIS, MISSOURI



APPENDIX F

DUST MONITORING ANALYTICAL DATA



6601 Kirkville Road
E Syracuse, NY 13057-0369
Phone (315) 432-5227
Fax (315) 437-0571
www.galsonlabs.com

July 17, 2001

DOH ELAP# 11626

Mr. Ron Elder
Burns & McDonnell
17 Cassens Court
Fenton, MO 63026

Client Account# 14525

Login# L72753

Dear Mr. Elder:

Enclosed are the analytical results of the samples received by our laboratory July 10, 2001.

Results in this report are based on the sampling data provided by the client. Unless otherwise requested, all samples will be discarded two weeks from the date of this report.

We strive to make our reporting format clear and understandable and hope you are thoroughly satisfied with our services.

Galson Laboratories is uniquely qualified to meet your needs for accurate and timely industrial hygiene analyses. Accredited by the American Industrial Hygiene Association since 1976, we perform all analyses according to NIOSH or OSHA-approved analytical methods. Galson Laboratories is committed to providing quality analyses and exceptional customer service.

Please contact your client service representative, Pam Weaver at (888) 577-5227, extension 116, if you would like any additional information regarding this report.

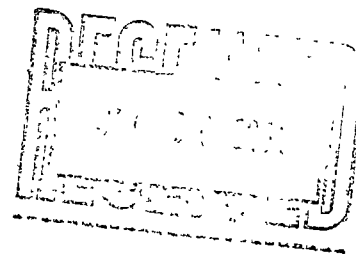
Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary L Withrow for
F. Joseph Unangst
Laboratory Director

Enclosure(s)



Pump Calibration Record:

Rotameter Calibration:

[illegible]



6601 Kirkville Road
E. Syracuse, NY 13057-0369
Phone (315) 432-5227
Fax (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : Burns & McDonnell
Site : Con-Way
Project No. : 22866-3.20

Date Sampled : 03-JUL-01 - 09-JUL-01 Account No.: 14525
Date Received : 10-JUL-01 Login No. : L72753
Date Analyzed : 12-JUL-01

Polychlorinated Biphenyls

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Front</u> <u>ug</u>	<u>Back</u> <u>ug</u>	<u>Total</u> <u>ug</u>	<u>Conc</u> <u>mg/m3</u>
W-1	L72753-1	96	<0.05	<0.05	<0.05	<0.0005
W-2	L72753-2	96	<0.05	<0.05	<0.05	<0.0005
* A-1	L72753-3	96	0.10	<0.05	0.10	0.001

COMMENTS: * Aroclor 1242 pattern.

Total ug corrected for a desorption efficiency of 100%.

Level of quantitation: 0.05 ug
Analytical Method : NIOSH 5503
OSHA PEL (TWA) : 1 mg/m3
Collection Media : Florisil

Submitted by: cmh
Approved by : dkf
Date : 17-JUL-01
QC by: *MGW*
NYS DOH # : 11626

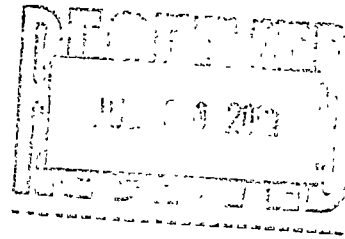
< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	





Galson
Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057-0369
Phone (315) 432-5227
Fax (315) 437-0571
www.galsonlabs.com



July 26, 2001

DOH ELAP# 11626

Mr. Ron Elder
Burns & McDonnell
17 Cassens Court
Fenton, MO 63026

Client Account# 14525

Login# L73029

Dear Mr. Elder:

Enclosed are the analytical results of the samples received by our laboratory July 19, 2001.

Results in this report are based on the sampling data provided by the client. Unless otherwise requested, all samples will be discarded two weeks from the date of this report.

Please contact your client service representative, Pam Weaver at (888) 577-5227, extension 116, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

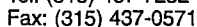
Sincerely,

Galson Laboratories

F. Joseph Unangst
Laboratory Director

Enclosure(s)





Project #: 77866-3.20

LAB ORIGINAL



6601 Kirkville Road
E. Syracuse, NY 13057-0369
Phone (315) 432-5227
Fax (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : Burns & McDonnell
Site : Con-Way Central Express
Project No. : 22866-3.20

Date Sampled : 10-JUL-01 - 16-JUL-01 Account No.: 14525
Date Received : 19-JUL-01 Login No. : L73029
Date Analyzed : 25-JUL-01

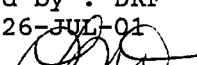
PCB (Aroclors 1016-1260)

Sample ID	Lab ID	Air Vol liter	Front ug	Back ug	Total ug	Conc mg/m3
* A-2	L73029-1	96	0.10	<0.05	0.10	0.001
* A-3	L73029-2	96	0.09	<0.05	0.09	0.0009
A-4	L73029-3	96	<0.05	<0.05	<0.05	<0.0005
W-3	L73029-4	96	<0.05	<0.05	<0.05	<0.0005
W-4	L73029-5	96	<0.05	<0.05	<0.05	<0.0005
B-1 BLANK	L73029-6	NA	<0.05	<0.05	<0.05	NA

COMMENTS: * Altered Aroclor 1248 present.

Total ug corrected for a desorption efficiency of 100%.

Level of quantitation: 0.05 ug
Analytical Method : NIOSH 5503; GC/ECD
OSHA PEL (TWA) : 0.5-1 mg/m3
Collection Media : Filter & Tube

Submitted by: CMH
Approved by : DKF
Date : 26-JUL-01
QC by: 
NYS DOH # : 11626

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million





6601 Kirkville Road
E Syracuse, NY 13057-0369
Phone. (315) 432-5227
Fax (315) 437-0571
www.galsonlabs.com

August 15, 2001

DOH ELAP# 11626

Mr. Ron Elder
Burns & McDonnell
17 Cassens Court
Fenton, MO 63026

Client Account# 14525

Login# L73614

Dear Mr. Elder:

Enclosed are the analytical results of the samples received by our laboratory August 08, 2001.

Results in this report are based on the sampling data provided by the client. Unless otherwise requested, all samples will be discarded two weeks from the date of this report.

Please contact your client service representative, Pam Weaver at (888) 577-5227, extension 116, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

A handwritten signature in black ink, appearing to read "F. Joseph Unangst", with the word "FOR:" written below it.

F. Joseph Unangst
Laboratory Director

Enclosure(s)





6601 Kirkville Road
E Syracuse, NY 13057-0369
Phone. (315) 432-5227
Fax. (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : Burns & McDonnell
Site : Con-Way Central Express
Project No. : 22866-3.20

Date Sampled : 01-AUG-01 - 02-AUG-01 Account No.: 14525
Date Received : 08-AUG-01 Login No. : L73614
Date Analyzed : 14-AUG-01

Polychlorinated Biphenyls

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Front</u> <u>ug</u>	<u>Back</u> <u>ug</u>	<u>Total</u> <u>ug</u>	<u>Conc</u> <u>mg/m3</u>
A-5	L73614-1	96	<0.05	<0.05	<0.05	<0.0005
W-5	L73614-2	96	<0.05	<0.05	<0.05	<0.0005
LAB BLANK	L73614-3	NA	<0.05	<0.05	<0.05	NA

COMMENTS: Total ug corrected for a desorption efficiency of 100%.

Level of quantitation: 0.05 ug
Analytical Method : NIOSH 5503
OSHA PEL (TWA) : 1 mg/m3
Collection Media : Florisil

Submitted by: cmh
Approved by : dkf
Date : 15-AUG-01
QC by:
NYS DOH # : 11626

<	-Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
>	-Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA	-Not Applicable	ND -Not Detected	ppm -Parts per Million	



Galson

Laboratories

6601 Kirkville Road

P.O. Box 369

E. Syracuse, NY 13057

Tel: (315) 437-7252 888-577-Labs (5227)

Fax: (315) 437-0571

Request For Industrial Hygiene Analysis

Company Name: Burns & McDonnell

Site Name: Con-way Central Express

Sampled By: <i>Z. Elder</i>	Project #: <i>22866-3.20</i>
-----------------------------	------------------------------

Send Report to: Burns & McDonnell

Invoice to:

☒ Purchase order number _____

(or)

☐ Credit Card (type) _____

☐ Verbal Authorization _____

Card # _____ Exp Date _____

☒ Standard Turn-Around Time

OR

☐ Rush: Date and Time Requested: _____ am
pm

☐ Phone Results to: _____

Phone # () - - ext. _____

☒ Fax Results to: Kon Elder

Fax # (630) - 326 - 8295

☐ Email Results to: _____

[illegible]

*For passive monitors please list time exposed in minutes.

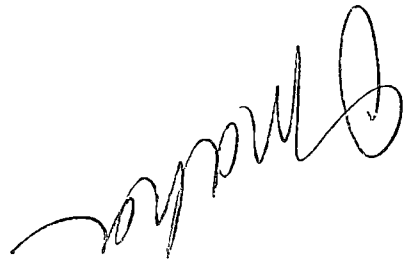
Comments (Please list any known interferences present in sampling area): Blank not submitted

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by:	Ronald W. Elder	Ronald W. Elder	8/6/01 / 0800
Received by LAB.	Bruce Baxter	Bruce Baxter	8/6/01 / 10:30

Samples received after 3pm will be considered as next day's business.

1 AB ORIGINAL

SEPARATOR PAGE

A handwritten signature in black ink, written diagonally. The signature is cursive and appears to read "C. M. H. S." or similar, with a large loop at the end.

[2]3 JAN 7 2006

Mr. Bill Neal
Division Manager – Environmental and Regulatory Affairs
Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247

SUBJECT: Modification to the OPPD Former Substation PCB Characterization and Remediation Work Plan, Approved on December 23, 2005

Dear Mr. Neal:

I have reviewed the modifications to the Omaha Public Power District (OPPD) Former Substation Polychlorinated Biphenyl (PCB) Characterization and Remediation Work Plan submitted by Aquaterra, your contractor, on January 16, 2006, modifying the following:

- Disposal of all remediation wastes less than 50 parts per million (ppm) will be taken to a Subtitle D landfill for proper disposal instead of US Ecology – Beatty, Nevada,
- The 15-day notification requirement to the Subtitle D landfill will be waived since both Butler County Landfill has made written notification of acceptance of this waste and the state is in concurrence with this waiver,
- The remediation plan for Substation 22 and Substation 18 as described in the January 16, 2006 submission will be included as part of the above mentioned work plan.

Pursuant to 40 C.F.R. Part 761.61(c) the Environmental Protection Agency (EPA), Region 7, hereby grants approval of the modification to the December 23, 2005 approval of the OPPD Former Substation PCB Characterization and Remediation Work Plan.

Be advised that an authorized Region 7 inspector may come on the site during the remediation to observe, and may take samples or splits of the contractor's samples at his discretion.

If you have questions, please contact Mazzie Talley of my staff at 913-551-7518.

Sincerely,

William A. Spratlin
Director
Air, RCRA, and Toxics Division

cc: Michael J. Miller, CHMM
Aquaterra Environmental Solutions, Inc.

Jim Harford
Nebraska Department of Environmental Quality



2074841

ARTD/CRIB:MT:lt:1/19/2006:H:CRIB:Mazzie/FY06/OPPDModLtr.doc

TALLEY SMITH SPRATLIN
CRIB CRIB ARTD

mar
1/19/06

will
1/19/06

1/19/06



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

23 JAN 2006

Mr. Bill Neal
Division Manager – Environmental and Regulatory Affairs
Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247

SUBJECT: Modification to the OPPD Former Substation PCB Characterization and Remediation Work Plan, Approved on December 23, 2005

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Be advised that an authorized Region 7 inspector may come on the site during the remediation to observe, and may take samples or splits of the contractor's samples at his discretion.

If you have questions, please contact Mazzie Talley of my staff at 913-551-7518.

Sincerely,

William A. Spratlin
Director
Air, RCRA, and Toxics Division

cc: Michael J. Miller, CHMM
Aquaterra Environmental Solutions, Inc.

Jim Harford
Nebraska Department of Environmental Quality

AQUATERRA

ENVIRONMENTAL SOLUTIONS, INC.

January 16, 2006

Ms. Mazzie Talley
U.S. EPA
Air, RCRA, and Toxics Division
901 N. 5th Street
Kansas City, KS 66101

Re: Omaha Public Power District (OPPD) Former Substation PCB Characterization
and Remediation Work Plan - Modification

Ms. Talley:

On behalf of our client - Omaha Public Power District (OPPD), I am submitting this Work Plan modification request for your review and approval. This modification request is for the Work Plan submitted by OPPD on December 16, 2005 and approved by EPA on December 23, 2005 for site characterization and remediation activities at the following six substations located in Omaha, Nebraska:

- Substation 15 @ 41st & Farnam
- Substation 18 @ 2319 N 29th Street
- Substation 22 @ 50th & Leavenworth
- Substation 27 @ 38th & Maple
- Substation 30 @ 2219 N 18th Street
- Substation 33 @ 30th & Poppleton

As detailed in the previously approved Work Plan, OPPD proposed to dispose of all remediation wastes at a TSCA approved disposal facility (US Ecology – Beatty, Nevada). To date, the following wastes have been shipped to the TSCA facility:

- Substation 18 @ 2319 N 29th Street – A total of 3 end dumpers or approximately 75 ton of remediation wastes (soil and concrete with the highest as-found concentration of 9.49 ppm and 30.68 ppm, respectively)
- Substation 27 @ 38th & Maple – 1 end dumper or approximately 25 ton of wastes (soil and concrete with the highest as found concentration of 57 ppm and 125 ppm, respectively)

Based on the volume and the relatively low levels of contamination in the remaining remediation wastes, OPPD would like to modify the Work Plan to allow the wastes to be

Ms. Mazzie Talley

Page -2-

taken to a Subtitle D landfill. OPPD proposes to take the remaining remediation wastes to the Butler County Landfill and has already made written notification to the landfill as to the quantities and concentrations (see attached waste profile and volume/concentration spreadsheets dated January 12, 2006). Please note that OPPD has already received written approval (see attached Special Waste Approval dated January 12, 2006) from the landfill for disposal and would like to begin disposal activities upon receipt of your verbal approval of the proposed Work Plan modifications. Therefore, we are requesting a waiver of the landfill 15-day notification requirement as set forth in 761.61.

Also, as detailed in the previously approved Work Plan, OPPD planned to address any contamination within the buildings under a separate Work Plan. Contamination was identified in a small basement area of Substation 22 (less than 10 square feet at a concentration of 8.06 ppm) and in a small main floor area of Substation 18 (less than 10 square feet at a concentration of 1.26 ppm). OPPD would like to include the remediation of these areas as part of this Work Plan modification and proposes to clean the areas with a solvent. One confirmatory core sample will be collected from each area at least 24 hours subsequent to cleaning to verify adequate removal of contamination. Please indicate your concurrence with this proposed approach.

We look forward to your approval of these Work Plan modifications as proposed and will provide a courtesy copy of this letter and your response to Mr. Jim Hardford of the Nebraska Department of Environmental Quality upon receipt. Again, thanks for your continued assistance and guidance on this project and please do not hesitate to call me at 402-964-2710 if you have any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Miller". The signature is fluid and cursive, with the first name "Michael" and last name "Miller" clearly distinguishable.

Michael J. Miller, CHMM
Senior Project Manager

SEPARATOR PAGE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

23 DEC 2005

Mr. Bill Neal
Division Manager – Environmental and Regulatory Affairs
Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247

SUBJECT: OPPD Former Substation PCB Characterization and Remediation Work Plan

Dear Mr. Neal:

I have reviewed the OPPD Former Substation PCB Characterization and Remediation Work Plan submitted by you on December 16, 2005, delineating a sampling and remediation plan for at PCBs the following substations:

- Substation 15 @ 41st & Farnam
- Substation 18 @ 2319 N 29th Street
- Substation 22 @ 50th & Leavenworth
- Substation 27 @ 38th & Maple
- Substation 30 @ 2219 N 18th Street
- Substation 33 @ 30th & Poppleton.

Pursuant to 40 C.F.R. Part 761.61(c) the Environmental Protection Agency (EPA), Region 7, hereby grants approval of the proposed work plan and approval for the Omaha Public Power District to sample the above mentioned site of previous substations and to remediate PCBs if found in the OPPD Former Substation PCB Characterization and Remediation Work Plan. It is understood that if PCBs are found in either building at Substation 18 or Substation 22, a separate approval for remediation of these structures will be sought from EPA, Region 7.

Be advised that an authorized Region 7 inspector may come on the site during the remediation to observe, and may take samples or splits of the contractor's samples at his discretion.



2074842



If you have questions, please contact Mazzie Talley of my staff at 913-551-7518.

Sincerely,

William A. Spratlin
Director
Air, RCRA, and Toxics Division

cc: Michael J. Miller, CHMM
Aquaterra Environmental Solutions, Inc.

Jim Harford,
Nebraska Department of Environmental Quality

23 DEC 2005

Mr. Bill Neal
Division Manager – Environmental and Regulatory Affairs
Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247

SUBJECT: OPPD Former Substation PCB Characterization and Remediation Work Plan

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- Substation 27 @ 38th & Maple
- Substation 30 @ 2219 N 18th Street
- Substation 33 @ 30th & Poppleton.

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Be advised that an authorized Region 7 inspector may come on the site during the remediation to observe, and may take samples or splits of the contractor's samples at his discretion.

ARTD/CRIB/MTALLEY/H:CRIB/MAZZIE/OPPTSubstation.DOC

MTALLEY

SMITH

SPRATLIN

CRIB

CRIB

ARTD

mat
122305

mat for Mas
122305

for
12/23/05



444 South 16th Street Mall
Omaha NE 68102-2247

December 16, 2005
05-EA-168

Ms. Mazzie Talley
U.S. EPA
Air, RCRA, and Toxics Division
901 N. 5th Street
Kansas City, KS 66101

Subject: OPPD Former Substation PCB Characterization and Remediation Work Plan

Dear Ms. Talley:

Omaha Public Power District (OPPD) has placed a high priority in performing site characterization and remediation at the following six substations located in Omaha, Nebraska:

- Substation 15 @ 41st & Farnam
- Substation 18 @ 2319 N 29th Street
- Substation 22 @ 50th & Leavenworth
- Substation 27 @ 38th & Maple
- Substation 30 @ 2219 N 18th Street
- Substation 33 @ 30th & Poppleton

All of the above substations are decommissioned and all electrical equipment (i.e. Transformers, Switch Gear) has been removed from the sites (ranging from six months to several years ago). Equipment previously located at these sites did contain PCBs however there are no documented or known releases of PCBs at these sites. It is expected that any potential contamination would be localized at or near where the electrical equipment was located within the site boundaries (sites were not used as a storage yard).

To bring closure to this process by the end of the year, and to ultimately prepare these sites for sale to the public, OPPD has outlined an aggressive timeline for site characterization and

remediation. Therefore, in accordance with 761.61(c), OPPD is submitting this written request for approval by EPA using a risk-based approach.

As previously discussed, OPPD is not aware of any documented or known releases of PCBs at the six subject substations. Therefore, in an effort to adequately characterize the sites, OPPD proposes to collect individual aliquots of media (i.e. soils, concrete) at each point on a 1 ½ meter grid. OPPD believes the use of a 1 ½ meter grid will better detect any isolated release that may have occurred or migrated at these sites. OPPD further proposes to composite samples of like media based on location within the sites and likelihood for contamination to have occurred.

OPPD understands that Subpart N does not allow compositing for site characterization, but does feel that compositing is appropriate for these sites. Specifically, OPPD proposes to use a dig-and-haul approach to remove any media from the site which is found to contain PCBs using the below compositing approach. Therefore, it is not critically important to determine the level of PCBs in any single aliquot but rather to determine the presence or lack thereof of PCBs as a whole. The collection of aliquots every 1 ½ meters and the compositing of samples will allow the identification of a single point concentration in the following ratios:

# of samples in composite	Minimum concentration in any single aliquot that would trigger OPPD dig-and-haul threshold of 1 ppm
1	1 ppm
4	4 ppm
10	10 ppm
20	20 ppm
30	30 ppm
40	40 ppm
50	50 ppm

As shown above, the proposed compositing strategy will allow OPPD to cast a broad net over the entire site and significantly increase the probability that an isolated area of contamination will be identified. In an effort to maximize the probability of contamination discovery, areas where it could be reasonably expected to find contamination (i.e. equipment pads) will be limited to 20 aliquots per composite. This approach will ensure that a single aliquot with a concentration of 20 ppm will be identified in the composite sample triggering the OPPD dig-and-haul threshold.

OPPD proposes to visually observe the interior and exterior surfaces of all site buildings. Wipe samples will be collected and analyzed if visible staining is observed on any of the building surfaces. Additionally, visual observations of sub-grade vaults will be conducted and if sediments are present, discreet bulk samples will be collected and analyzed. The substation buildings contained equipment and were not used for repair or maintenance.

Therefore, OPPD believes this approach will further increase the probability of contamination discovery. If contamination is found in the interior portions of the substation buildings with wipe or bulk samples resulting in levels greater than 1 ppm, core sampling, further evaluations, and remediation activities will be pursued separately after January 1, 2006.

Upon completion of the initial site characterization, OPPD proposes to further characterize any identified contamination in excess of 1 ppm using a mobile GC at the site. The additional field characterization will ensure that any areas with concentrations at or above 1 ppm are remediated and sent offsite for disposal. Remediated (excavated soils and concrete, scarified concrete, vacuumed sediments) materials will be placed into DOT-approved drums or roll-off containers and will be transported to a TSCA approved disposal facility (US Ecology - Beatty, Nevada).

To confirm that contamination has been adequately removed to the high-occupancy level, OPPD proposes to perform post-remediation sampling as follows:

Excavated Areas: Collect one sample from each of the four sidewalls and one sample from the excavation basin in a manner so that the sample is collected from the most likely area of PCB contamination. OPPD will analyze these samples individually and not as a composite. OPPD further proposes to collect additional basin samples for excavation areas greater than 400 square feet in a ratio of 1 per 400 square feet.

Scarified Concrete Areas: Collect one core sample from the most likely area of PCB contamination. If area is greater than 400 square feet, collect an additional sample in a ratio of 1 per 400 square feet. OPPD will analyze these samples individually and not as a composite.

Vacuumed Sediments: Confirm visually that all sediment has been removed from vault. Collect one wipe from vault floor.

Personnel engaged in the sampling and remediation activities outlined above will be 40-hour trained and all personnel will use appropriate personal protective equipment while onsite during the site characterization and remediation activities. All sampling equipment will be decontaminated between each sampling point and remediation equipment will be decontaminated between each substation in accordance with Subpart S. Please note that OPPD does not plan to backfill excavated materials at this time. Excavated materials are expected to be within fenced areas and therefore will not pose a public threat. If excavation occurs outside the fenced area, OPPD will either backfill the area or place appropriate barriers to protect the public.

OPPD strongly believes that the proposed methodology above is appropriate for these sites given their history and the lack of known or documented releases. We further believe that this conservative approach, as presented, is adequately protective of human health and the environment and provides assurance that any isolated contamination is addressed prior to property disposal. We look forward to your written concurrence and look forward to returning these sites to the local tax base.

OPPD has provided a courtesy copy of this correspondence to Mr. Jim Hardford of the Nebraska Department of Environmental Quality, per your specific request. Please do not hesitate to call Dick Varner at 402-636-2304 if you have any questions or comments.

Sincerely,


Bill Neal

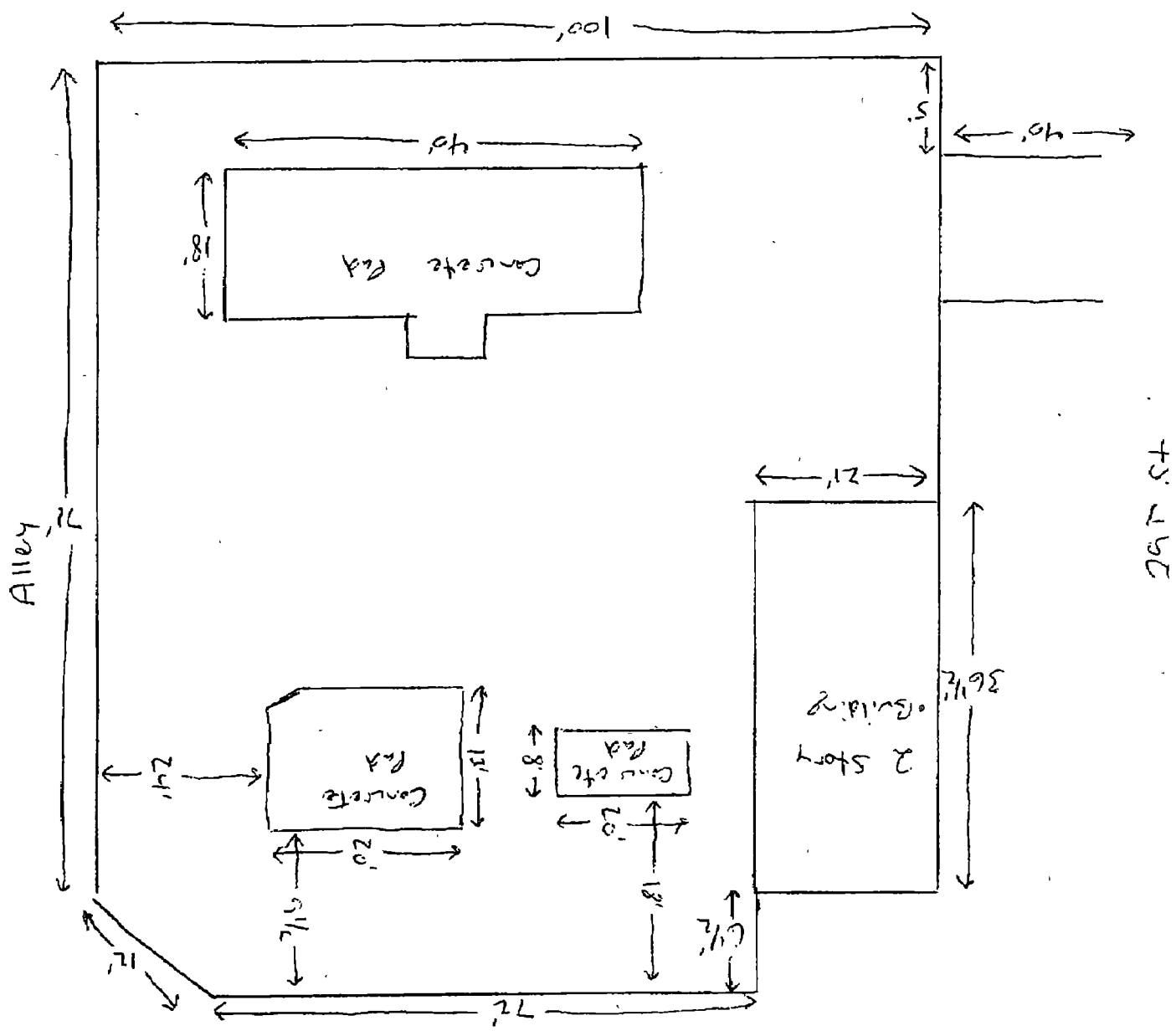
Division Manager - Environmental and Regulatory Affairs
Omaha Public Power District

Attach. 1

Cc: Jim Hardford - NDEQ
W. L. Neal, I. Cherko, R. R. Varner, S. S. Kim

N ↓

Substation 18 - (Not to Scale)

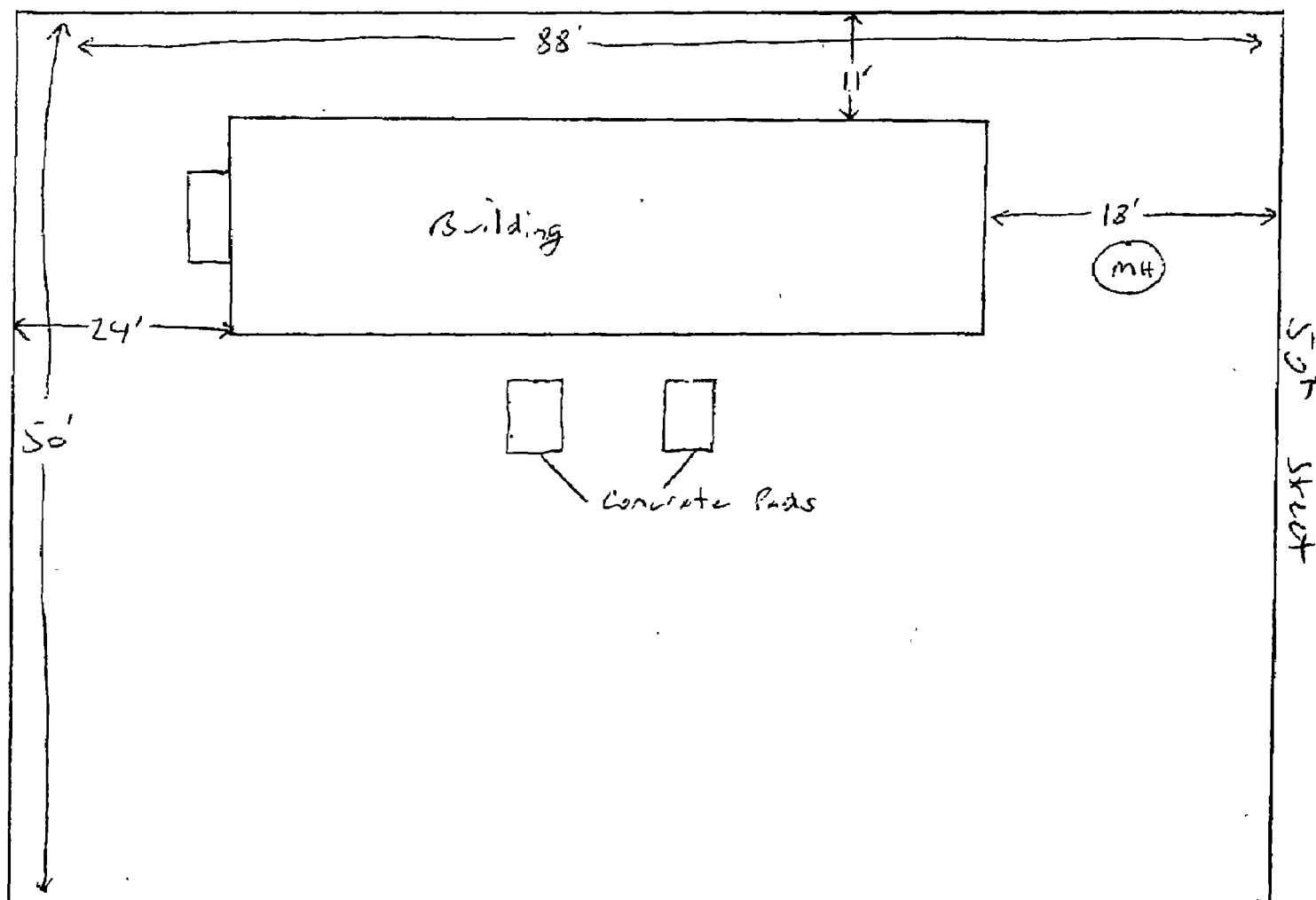


1 1/2 meter Smokey gr. (SE corner reference pt)
 ~1/5 → A-Q
 E/W → 1-21

N ↑

Substation 22 (not to scale)

Alley



Leavenworth

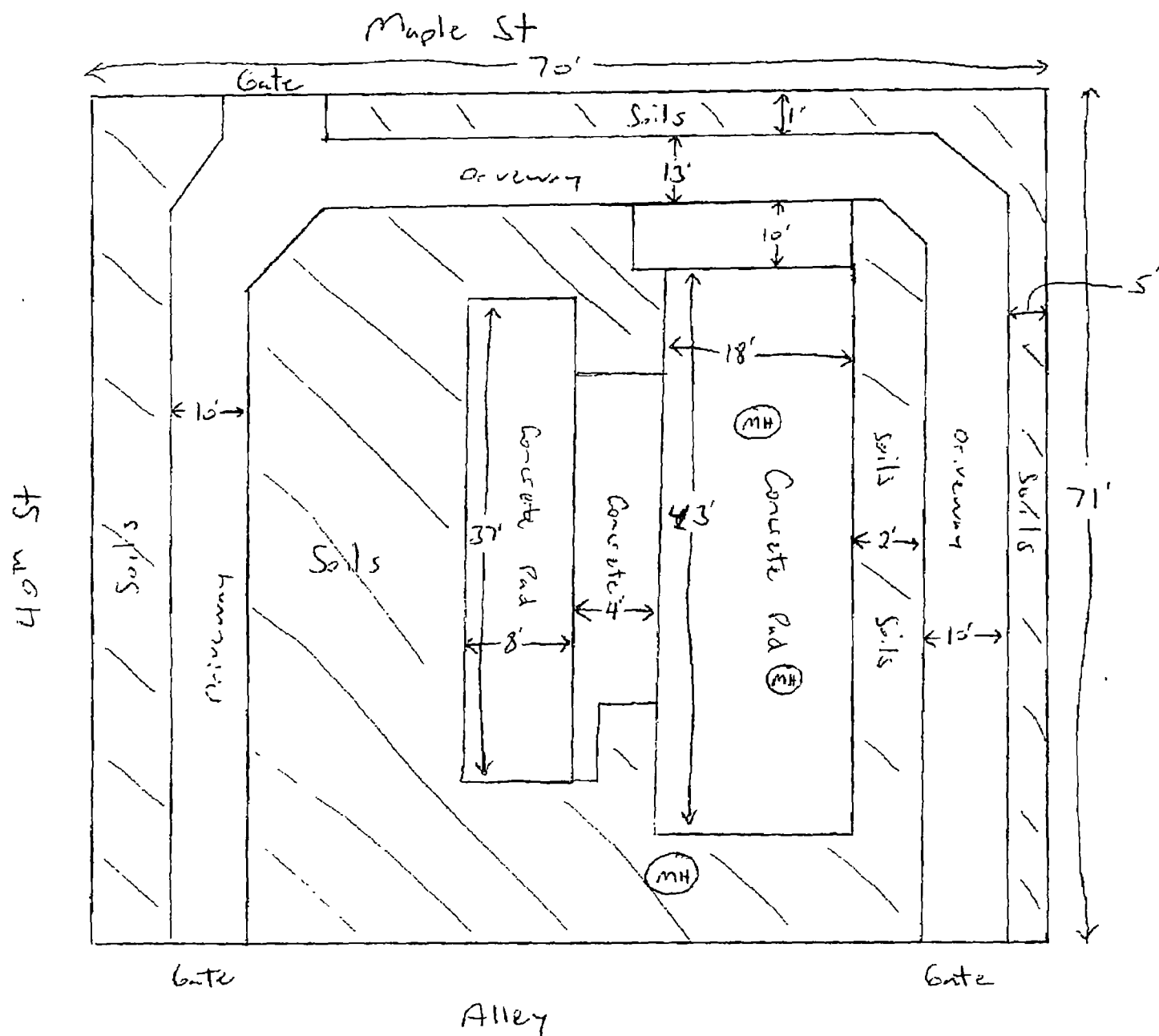
1 1/2 meter sampling grid
(NE corner reference pt)

N/S → A-K
E/W → 1-19

⊙ MH Manhole → Vault

N ↑

Substation 27 (Not to Scale)



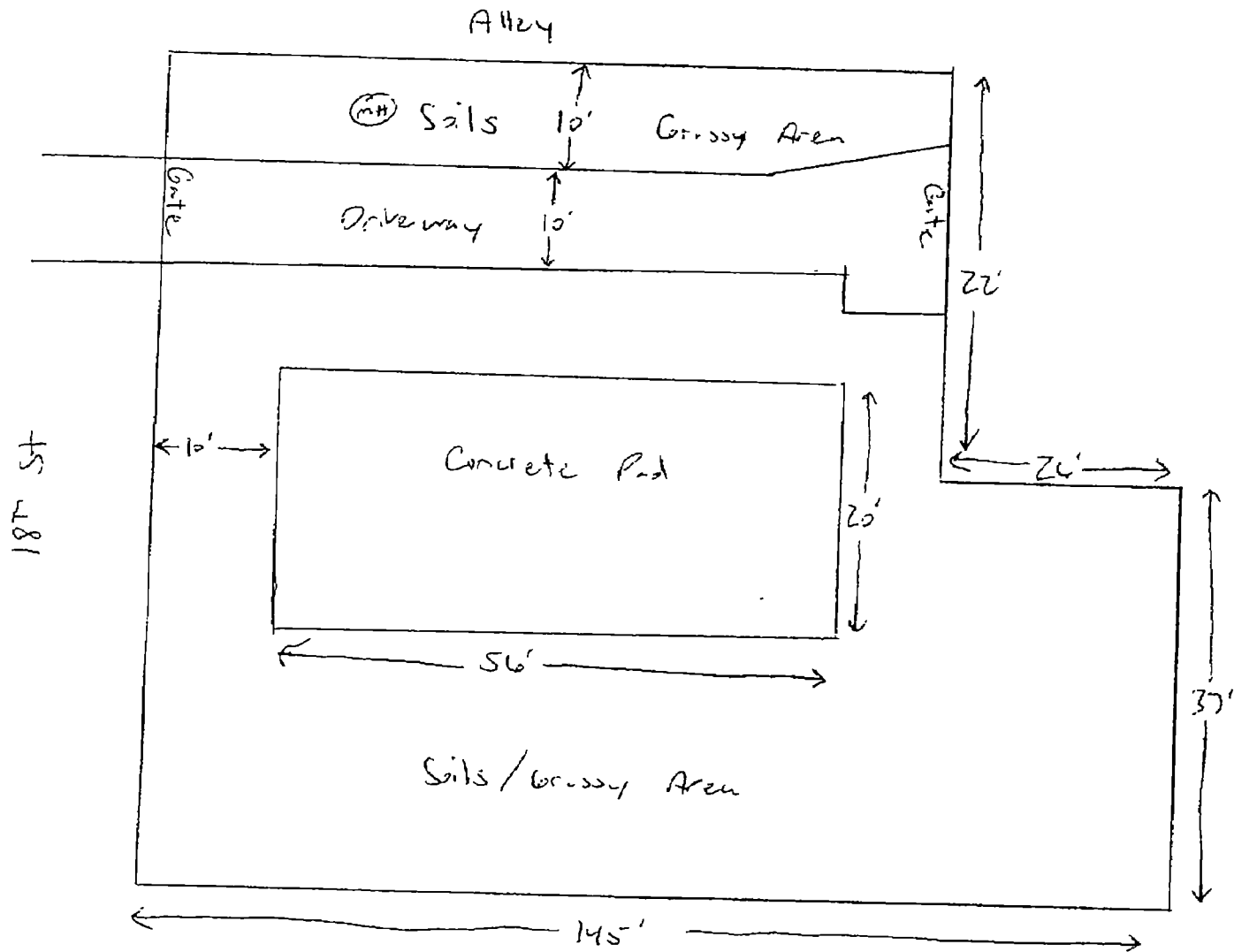
1/2 meter sampling grid
(NW corner reference pt)

N/S → A-0
E/W → 1-15

⊙ MH Manhole → Vault

N ↑

Substation 30 (not to scale)



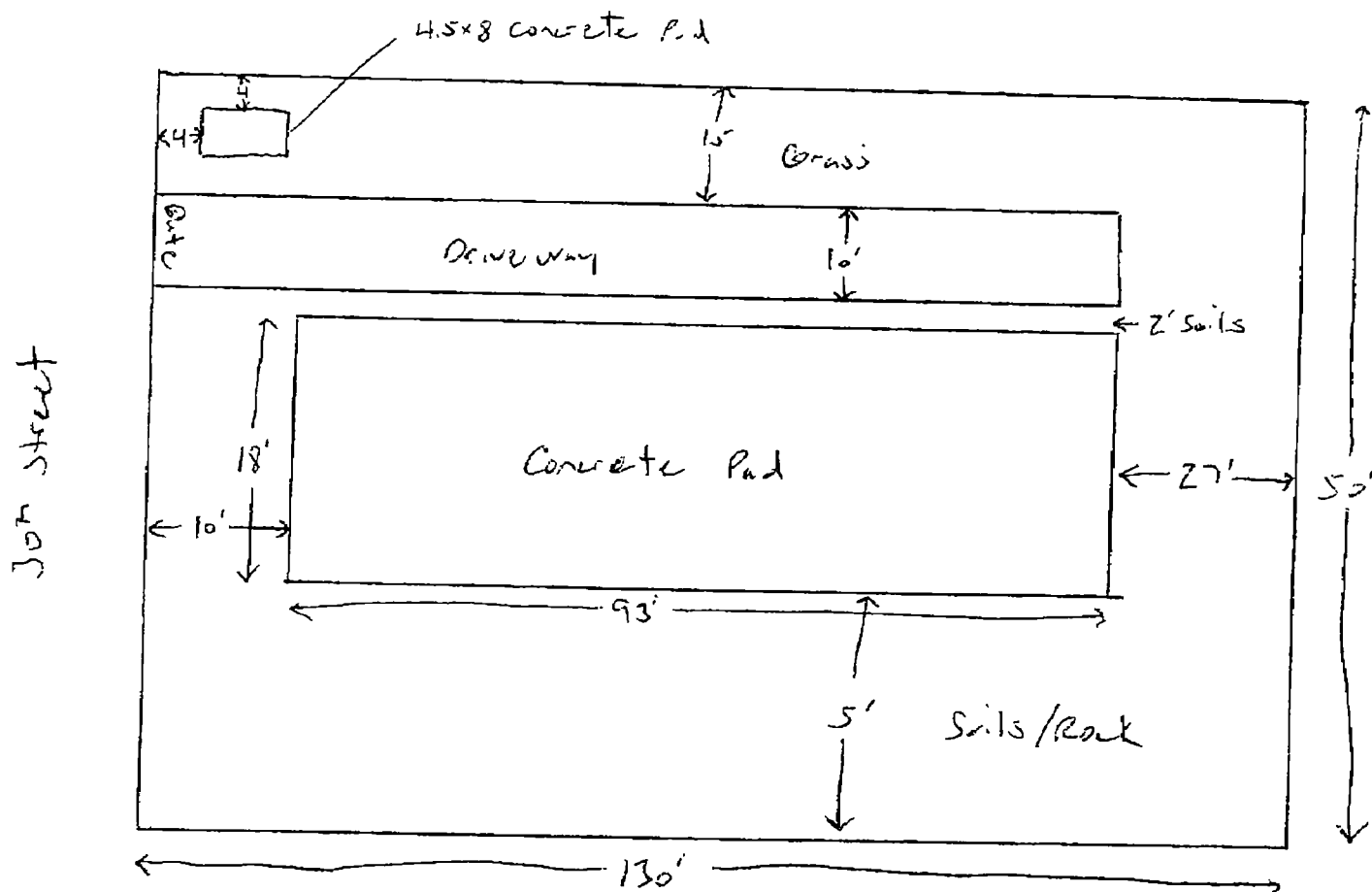
1 1/2 meter sample grid
(SE corner reference pt)

N/S → A-L
E/W → 1-30

(MH) manhole → Vault

N ↑

Substation 33 (not to scale)

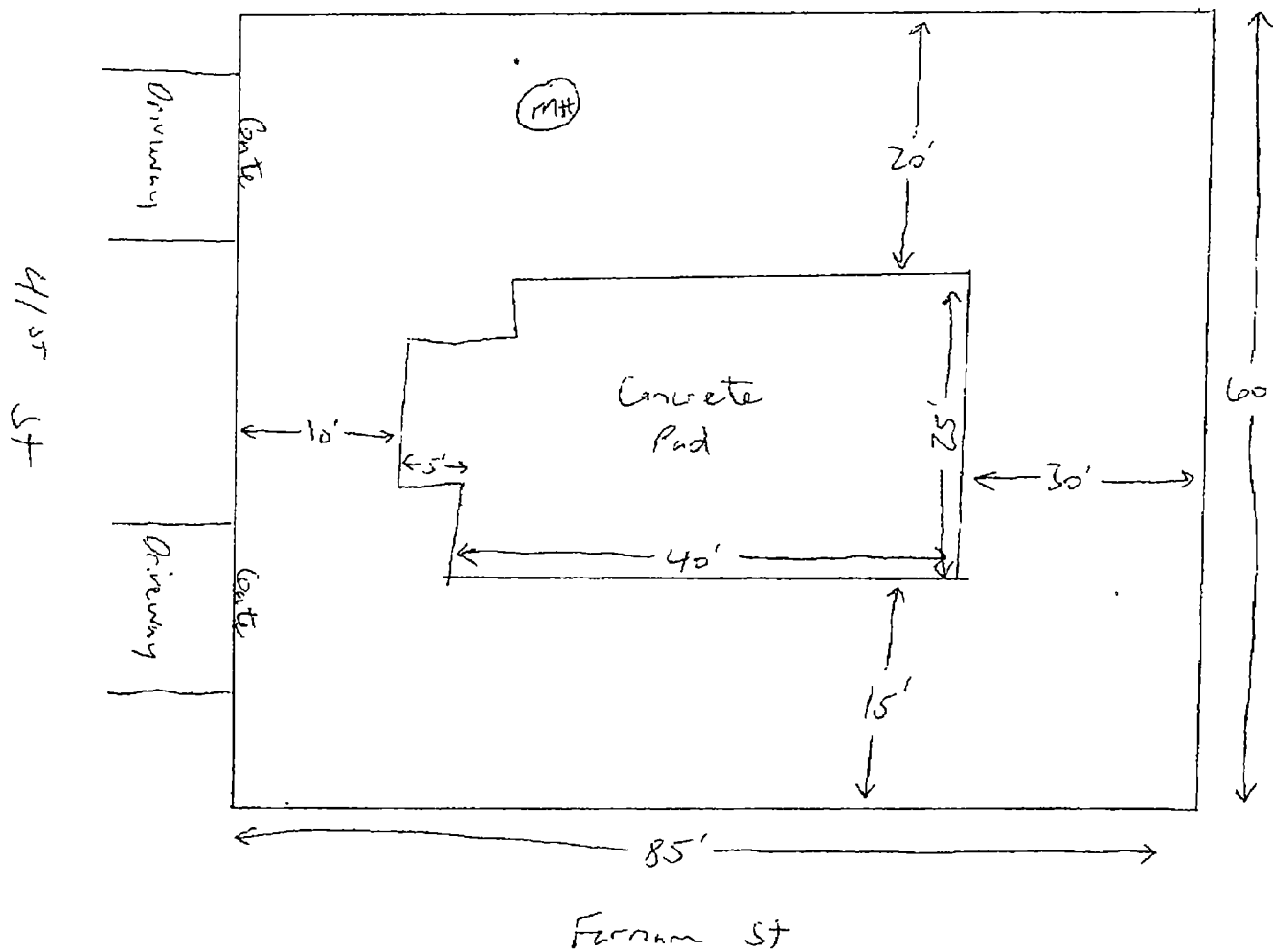


1 1/2 meter sampling grid
(NW corner reference pt)

N/S → A-K
E/W → 1-27

N ↑

Substation 15 (not to scale)



1 1/2 meter sampling grid
(NW corner reference pt)

N/S → A-M
E/W → 1-18

(MH) Manhole → Vault



February 21, 2006

Ms. Mazzie Talley
U.S. EPA Region VII
901 North 5th Street
Kansas City, Kansas 66101

Mr. Franky Arnwine
Remedial Section/Voluntary Cleanup Unit
Kansas Department of Health & Environment
Bureau of Environmental Remediation
1000 SW Jackson, Suite 410
Topeka, Kansas 66612

Former Delphi Olathe Battery Plant
PCB Remediation Waste Cleanup Plan
Project Number 41587



2075598

Dear Ms. Talley and Mr. Arnwine:

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) has prepared this plan on behalf of Delphi Corporation (Delphi) to briefly summarize relevant information regarding the Site's history and recent Site activities, to document PCB remediation waste sampling, and to propose a disposal and cleanup plan for the Site located at 400 West Dennis Avenue, Olathe, Kansas.

The implementation of a Cleanup Plan must be specific to Site use and occupancy requirements pursuant to 40 CFR 761. With regards to the expected future use of the Site, the impacted area meets the EPA regulatory definition of a Low Occupancy Area as defined in 40 CFR 761.3.

There are three options for cleaning up the Site to meet regulatory requirements as described in 40 CFR 761:

1. The Site can be cleaned up following the procedures in 40 CFR 761.61(a) which requires the facility to characterize the Site according to 40 CFR 761 Subpart N and to achieve clean up levels based on the occupancy classification of the Site. Since the area is a low occupancy area, this would require the Site to be cleaned up to ≤ 25 ppm total PCBs. According to 40 CFR 761.61(a)(4)(v), if there is an actual or proposed change in land use for the Site, Delphi would be required to clean up the Site to meet the high



Ms. Talley & Mr. Arnwine
February 21, 2006
Page 2

occupancy levels (≤ 1 ppm or ≤ 10 ppm with a cap).

2. PCB remediation waste at the Site requiring disposal must follow the disposal procedures outlined in 40 CFR 761.61(b), which are specific for liquid and non-liquid PCB remediation wastes.
3. The Site can be cleaned up following 40 CFR 761.61(c) which allows sampling, clean up and/or disposal of PCB remediation waste in a manner other than prescribed in 40 CFR 761.61(a) or (b). A Cleanup Plan outlining the proposed sampling, clean up and disposal of the PCB remediation waste at the Site must be submitted to the EPA Regional Administrator for approval.

Due to the large size of the Site and based on Delphi's desire to use a target clean-up level of 9.5 ppm total PCBs, consistent with the Kansas Department of Health and Environment (KDHE) Tier 2 Risk-Based levels for non-residential scenarios, the Site will be cleaned up following 40 CFR 761.61(c). This Cleanup Plan will include discussion of recent PCB sampling conducted at three separate areas (concrete pad, soil stockpiles, and former lagoons) at the Site, proposed additional PCB sampling at the Site, proposed disposal plan for PCB remediation waste identified in conjunction with the Site, and proposed verification sampling at the Site. This Cleanup Plan is consistent with discussion and agreements reached in our January 26, 2006 meeting with the EPA and the KDHE Bureau of Environmental Remediation, and with follow-up discussions with the KDHE Bureau of Waste Management.

Delphi's desire to remediate PCB contamination at the Site to ≤ 9.5 ppm total PCBs is consistent with the on-going remediation and industrial lead cleanup levels established at the Site which will, under state rules, include engineering and land use controls at the Site. Lead remediation activities continue as outlined in the Work Plan for characterization and Interim Remedial Measures (IRM) submitted to and approved by KDHE. Laboratory sample analysis for PCBs has been conducted and will be conducted using USEPA SW-846 Method 8082.

All figures are located in Attachment A. Attachment B contains data summary tables and Attachment C includes laboratory analytical reports.

Site History and Nature of Contamination

The Site consists of approximately 68 acres of land located in Olathe, Kansas (see Figure 1). The Site was originally developed as an automotive battery manufacturing



Ms. Talley & Mr. Arnwine
February 21, 2006
Page 3

plant from vacant land in 1955 by General Motors, which operated the battery plant until 1999. The facility has since been owned and operated by Delphi, also for the manufacture of automotive batteries. The Site included a 330,000-square foot Manufacturing Building, a wastewater treatment plant, and several small ancillary buildings. Delphi is currently in the process of closing the battery plant and began demolition of structures at the Site in the summer of 2005. Demolition of the Manufacturing Building, except the concrete pad, has already been completed. The northern half of the Site is undeveloped and partially wooded.

Conestoga-Rovers & Associates (CRA) was retained by Delphi to complete a Phase I Environmental Site Assessment (ESA) of the Site. The Phase I ESA Site assessment was completed by CRA in November 2004. The purpose of the Phase I ESA was to identify recognized environmental conditions (RECs) at the Site.

A Phase II ESA field investigation was then completed by CRA in March 2005 to collect subsurface and analytical data to evaluate certain RECs identified in the Phase I and that were accessible at the time. An additional Phase II ESA (Phase II Addendum) was completed by CRA in April 2005 to further investigate the RECs investigated during the March 2005 Phase II ESA. Results of the ESAs are provided in the above referenced documents. Delphi subsequently entered into the Voluntary Cleanup and Property Redevelopment Program (VCPRP) and prepared plans, approved by KDHE, to characterize the Site and complete an interim remedial measure (IRM) to address lead impacted soils at the Site. Additional lead investigation and lead remediation is planned in the Manufacturing Building area, in perimeter areas around concrete pads and at other areas.

The primary focus of the IRM is the Rubber Battery Case Separator Settling Lagoon where lead-contaminated material is dispersed within the approximately 10- to 12- foot deep basin. The IRM at the Site consists of excavating soils identified as containing elevated lead levels, stabilization of the lead-impacted soil, and disposing of the soil at a Subtitle D landfill as a special waste. Soil stabilization activities began in November 2005.

Based on information discovered by Delphi at a similar Delphi site in Anaheim, California, limited PCB sampling began in November 2005 during the demolition at the Olathe Site. PCBs were found to be present in the concrete pad of the former building area. Samples of soil from the former lagoons, including stockpiles of soil already excavated from the former lagoons, were collected in January 2006 and found to contain PCB concentrations in excess of 50 ppm. Based on this information, the Site has been



Ms. Talley & Mr. Arnwine

February 21, 2006

Page 4

divided into three areas of interest for PCB characterization: concrete pad (former manufacturing building footprint), stockpiled soil (soil excavated from the former lagoons for lead stabilization), and former lagoons.

Concrete Pad

Recent PCB Sampling

As was observed at the Delphi-Anaheim site, large areas of purple staining exist on the concrete floor of the former manufacturing building area. The source of the purple stain is unknown at both locations. At the Olathe Site, the purple staining is not always visible at the surface of the concrete. The concrete pad, which varies in thickness from 4 to 6 inches, was mechanically broken so the staining could be observed in the profile of the concrete. The purple staining, where present, generally penetrates the concrete from 1/8- to 1-inch in depth. Both immunoassay field test kit samples and laboratory analytical samples have been collected from the concrete pad of the former building area to test for the presence PCBs. The immunoassay testing was completed using EnSys Rapid Immunoassay test kits (U.S. EPA SW-846 Method 4020) and laboratory analyses were performed using U.S. EPA SW-846 Method 8082. Samples sent to the laboratory were collected from pieces of the broken concrete originating from approximately the top 2 inches of the concrete pad. These samples were pulverized using a small mallet and a stainless steel bowl in the field. The presence of the purple staining guided the placement of sampling locations.

Sample results indicated PCBs ranging from non-detect to 882 ppm total PCBs. Figure 2 indicates the locations of the samples collected from the concrete pad. The hachured areas are considered "impacted areas" based on the field screening and laboratory samples previously collected. Table 1 summarizes the immunoassay and laboratory analytical results for this area. Laboratory analytical reports are included as Attachment C.

Soil samples were collected from beneath the concrete pad at the location with the highest detected PCB concentration (882 ppm total PCBs). The concrete pad was approximately 4 inches thick at this location. Three samples were collected at the same location but from three different depths for field and laboratory analysis. The sample collected from 0 to 6 inches deep had a total PCB concentration of 1.65 ppm, which was the highest PCB soil concentration from the laboratory analyses. Results are shown in Table 2.

Proposed Additional Characterization Sampling

Additional samples for laboratory analysis will be collected from the concrete pad to determine which areas have PCB concentrations greater than or equal to 50 ppm and will



Ms. Talley & Mr. Arnwine

February 21, 2006

Page 5

require disposal as a TSCA regulated waste, which areas have PCB concentrations between 9.5 ppm and less than 50 ppm and will require disposal off-Site at a Subtitle D landfill, and which areas have PCB concentrations less than 9.5 ppm and may remain on-Site (to be potentially crushed for use as backfill in the lagoon area).

Additional sampling of the concrete pad will be based on the boundary of the "impacted areas", as shown on Figure 2 by the hachured areas. The impacted area will be sampled using an approximately 30-foot grid spacing. Sample locations may be adjusted to maximize the number of samples that fall within the impacted area (See Figure 3). Therefore, each sample will represent an area of approximately 900 ft² (or less in areas where the sample spacing is adjusted), which is approximately one truckload of concrete. The area of inference for each sample point will extend half the distance to the nearest sample point in each direction.

Areas destined for off-Site TSCA disposal, off-Site Subtitle D disposal or on-Site disposal will be delineated based on the results of this characterization sampling.

Proposed Disposal Plan

There are three planned concrete disposal procedures based on the concentration of PCBs found in the concrete. All areas of impacted concrete with ≥ 9.5 ppm total PCBs will be disposed of off-Site. In addition, any areas with PCB laboratory analytical results ≥ 50 ppm total PCBs will be disposed of as TSCA-regulated waste. Areas with PCB laboratory analytical results ≥ 9.5 ppm total PCBs and < 50 ppm total PCBs will be disposed of off-Site at a Sub-title D landfill. Areas with PCB laboratory analytical results < 9.5 ppm total PCBs will remain at the Site, and may be used for fill for the former lagoon area after the former lagoon soils have been excavated.

Proposed Verification Sampling

The concrete around the impacted areas will be sampled to verify cleanup actions. The soil under the concrete with total PCB concentrations ≥ 50 ppm will also be sampled for cleanup verification. In addition, soil sampling from borings already planned as part of the VCPRP (Voluntary Cleanup and Property Redevelopment Program) investigation will include analysis of PCBs in areas beneath the PCB impacted concrete.

Cleanup verification samples around the concrete "impacted areas" (hachured areas indicated in Figure 2) will be collected using a maximum spacing of 100 feet. Because some impacted areas are small and/or irregularly shaped, verification sample locations may be adjusted to best accommodate these areas (See Figure 3). Discrete samples will



Ms. Talley & Mr. Arnwine
February 21, 2006
Page 6

be collected at these locations.

Verification sampling of the soil under those portions of the concrete pad that have total PCB concentrations ≥ 50 ppm will be conducted using a grid spacing of approximately 30 feet. Two discrete samples, one from 0 to 3 inches (representing the top 6 inches of soil) and one from 6 to 9 inches (representing the 6 to 12 inch depth), will be collected at the intersection of each grid line and sent to a laboratory for PCB analysis. The area of inference for each sample point will extend half the distance to the nearest sample point in each direction.

Areas of soil and additional areas of concrete determined to have total PCB concentrations ≥ 9.5 ppm will be excavated and taken off-Site for disposal. If any areas are found to have ≥ 50 ppm total PCBs, that soil will be excavated and disposed of as a TSCA-regulated waste.

Soil Stockpiles

Recent PCB Sampling

As part of the IRM, lead contaminated soil is excavated from the former lagoons and temporarily stockpiled on the surface of the lagoons which are not yet being excavated. After lead stabilization, the soil is to be disposed of off-site at a Subtitle D landfill as special waste. In December 2005, a portion of the lead-stabilized stockpile, approximately 4,300 tons of soil, was transported to the Forest View Landfill in Kansas City, Kansas where it is currently remains segregated from the general landfilled waste.

After PCBs were discovered in the concrete pad area, the stockpiles of soil at the Site and the stockpile at the landfill were sampled for PCBs. Samples were collected from each stockpile and sent for laboratory analysis. Samples were collected from the on-Site stockpiles at a rate equivalent to the rate approved by KDHE for TCLP lead sampling: one sample per approximately 500 tons of soil (approximately 300 cubic yards of soil). Grab samples were collected to a depth of several inches. PCB results for the stockpiles at the Site ranged from 17.5 ppm to 114.0 ppm, as summarized in Table 3.

Samples were collected from the landfill soil stockpile based on a grid pattern with 9 meter spacing. A total of 28 discrete samples (exceeding the KDHE 300 cubic yard sampling requirement) were collected from the grid intersection points (to a depth of three inches) and analyzed for PCBs. PCB results for the stockpile at the landfill ranged from non-detect to 72.3 ppm total PCBs, and have an average concentration of 36.3 ppm.



Ms. Talley & Mr. Arnwine
February 21, 2006
Page 7

Figure 4 indicates the locations and PCB results for samples from the soil stockpile at the landfill.

The USEPA and the KDHE have both agreed that the stockpiled soil at the Forest View Landfill may be landfilled at this site. However, Delphi fully recognizes that the management team at Forest View has final approval with regard to this decision, and intends to find an option that will be agreeable with Forest View.

Proposed Additional Characterization Sampling

Additional sampling of the soil stockpiles on the Site will not be conducted. Disposal decisions will be based on the laboratory samples previously collected, with the area of inference of each sample extending half the distance to the nearest sample point in each direction. Based on this sampling, the majority of the stockpiled soil will be disposed of as a TSCA-regulated waste.

Proposed Disposal Plan

On-Site stockpiled soil with PCB laboratory analytical results ≥ 50 ppm total PCBs will be disposed of as TSCA-regulated waste. Areas with PCB laboratory analytical results < 50 ppm total PCBs will be disposed of off-Site at a Sub-title D landfill. All soil will be stabilized for lead prior to disposal, regardless of final disposal location.

Stockpiled soil at the Forest View Landfill will be disposed of as special waste at the Forest View Landfill pending Forest View approval. If Delphi and Forest View come up with an alternate decision concerning this stockpiled soil, EPA and KDHE will be notified in a timely manner.

Proposed Verification Sampling

Verification sampling of the soil under the soil stockpiles currently on Site will not be required. These soil stockpiles are currently located on top of the former lagoon areas which will be excavated. As described below, the top approximately three feet of soil in the former lagoon areas will be excavated and disposed of as a TSCA-regulated waste.

Former Lagoons

Recent PCB Sampling

The soil still in place in the former lagoons was also tested for PCBs. Test trenches were dug in undisturbed areas of each of the three former lagoons (Figure 5). The visibly different layers of soil were sampled (to a total depth of approximately 7.5 feet, where native soil was encountered) and sent to a laboratory for PCB analysis. The highest



Ms. Talley & Mr. Arnwine

February 21, 2006

Page 8

concentrations of PCBs were found within the top 2.5 feet of soil in the former lagoons, ranging from 0.157 ppm to 692 ppm total PCBs. PCBs were also detected below this depth at significantly lower concentrations, ranging from non-detect to 25.6 ppm total PCBs. The 25.6 ppm sample was taken from a depth of 6 to 7 feet below ground surface.

Proposed Additional Characterization Sampling

Three additional test trenches will be made adjacent to the Z5P test pit location. As was done for test pit Z5P, visible layers of soil will be observed at each test trench. At the Z5P location, the sample collected from 6 to 7 feet below ground surface had a concentration of 25.6 ppm total PCBs. The intent of these additional test trenches is to verify that TSCA-regulated PCB concentrations are not present at depth in the area, surrounding the 25.6 ppm sample location. Additional test trenches will be placed in a triangular pattern around the original test trench at a distance of approximately 5 meters. Samples will be collected from the same layer as the layer where the elevated concentration was detected, at a depth of approximately 6 to 7 feet below the ground surface, and will be sent for laboratory analysis.

Proposed Disposal Plan

Based on the sampling previously conducted, the top approximately 3 feet of soil from all lagoon areas will be excavated and disposed of as TSCA-regulated waste, following lead stabilization. If additional sampling of soils at the 6 to 7 foot depth indicate total PCB concentrations < 50 ppm, all soil in the former lagoons below three feet will be sampled for PCBs consistent with the sampling for TCLP lead, at the rate of one sample per approximately 500 tons of soil (or approximately 300 cubic yards of soil) after it is stabilized for lead and stockpiled. Following the results of the sampling, any stockpiles with PCB laboratory analytical results \geq than 50 ppm total PCBs will be disposed of as TSCA-regulated waste. Areas with PCB laboratory analytical results < 50 ppm total PCBs will be disposed of at a Sub-title D landfill.

Proposed Verification Sampling

Verification sampling of the soil under the bottom of the former lagoons and around the outside of the former lagoon footprints will be conducted. Initial sample points will be consistent with the approved lead verification sampling for the IRM. For the excavation sidewalls, samples will be spaced with approximately 50 feet between sample points. At each sample location, samples will be collected at three vertical locations spaced evenly on the sidewall and composited to form one sample. Samples will be analyzed for both total lead and PCBs at a KDHE-certified laboratory.



Ms. Talley & Mr. Arnwine

February 21, 2006

Page 9

The footprint of the former lagoons will be sampled using a grid spacing of approximately 40 feet. A discrete sample will be collected at the intersection of each grid line and sent to a laboratory for PCB analysis. The area of inference for each sample point will extend half the distance to the nearest sample point in each direction and to a depth of approximately one foot.

Areas of soil determined to have total PCB concentrations ≥ 9.5 ppm (or greater than 1000 ppm total lead) will be excavated and taken off-Site for disposal. If any areas are found to have ≥ 50 ppm total PCBs, that soil will be excavated and disposed of as a TSCA-regulated waste.

Conclusion

The proposed sampling procedures and disposal plan are believed to be effective for proper Site characterization and removal verification. All soil and concrete with total PCB concentrations ≥ 9.5 ppm will be removed from the Site and disposed of according to the applicable regulations such that risk to human health and the environment is minimized. Land use controls (Environmental Use Controls, per KDHE KAR-28-73 requirements) will be put in place to prevent future land use change from a non-residential use.

A final removal report will be compiled including a summary of all sampling results and a summary of the final disposition of all soil and concrete sampled at the Site.

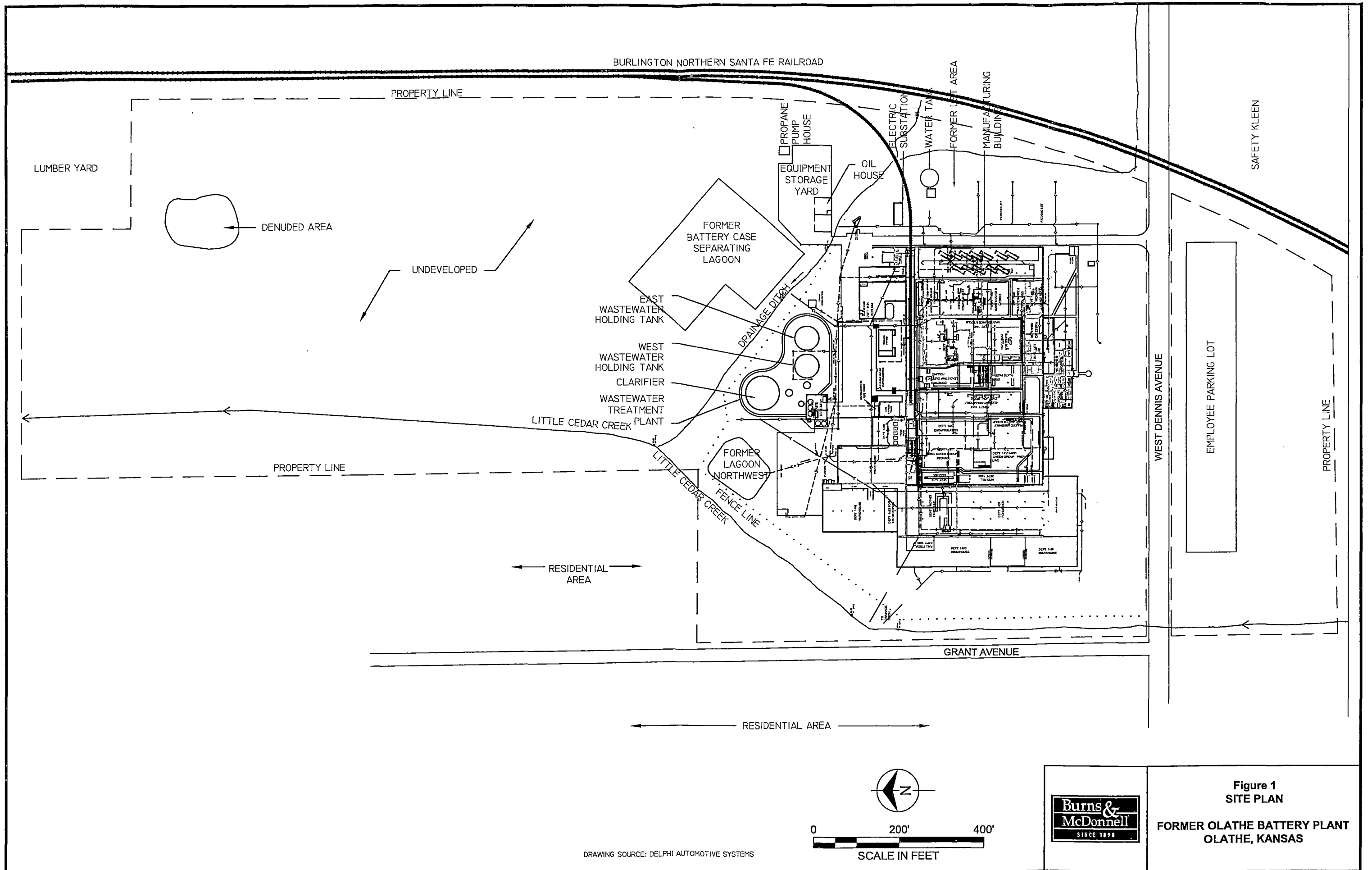
If you should have any questions regarding this plan, please feel free to contact me at (816) 822-3380.

Sincerely,

Craig O. Stevens
Project Manager

Attachments:

- Attachment A Figures
- Attachment B Summary of Prior PCB Sampling Results
- Attachment C Analytical Data Packages





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101
20 APR 2006

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Article Number: 7002 0860 0006 5969 8318

Mr. Craig O. Stevens
Project Manager
Burns & McDonnell
9400 Ward Parkway
Kansas City, Missouri 64114

RE: PCB Remediation Waste Cleanup Plan
Former Delphi Olathe Battery Plan
Project Number 41587

Dear Mr. Stevens:

This letter is in response to your letter of April 6, 2006, regarding EPA comments to your Polychlorinated Biphenyls (PCBs) Remediation Waste Cleanup Plan of the former Delphi Olathe Battery Plan and your request for approval of the PCB Remediation Waste Cleanup Plan for the Former Delphi Olathe Battery Site located in Olathe, Kansas.

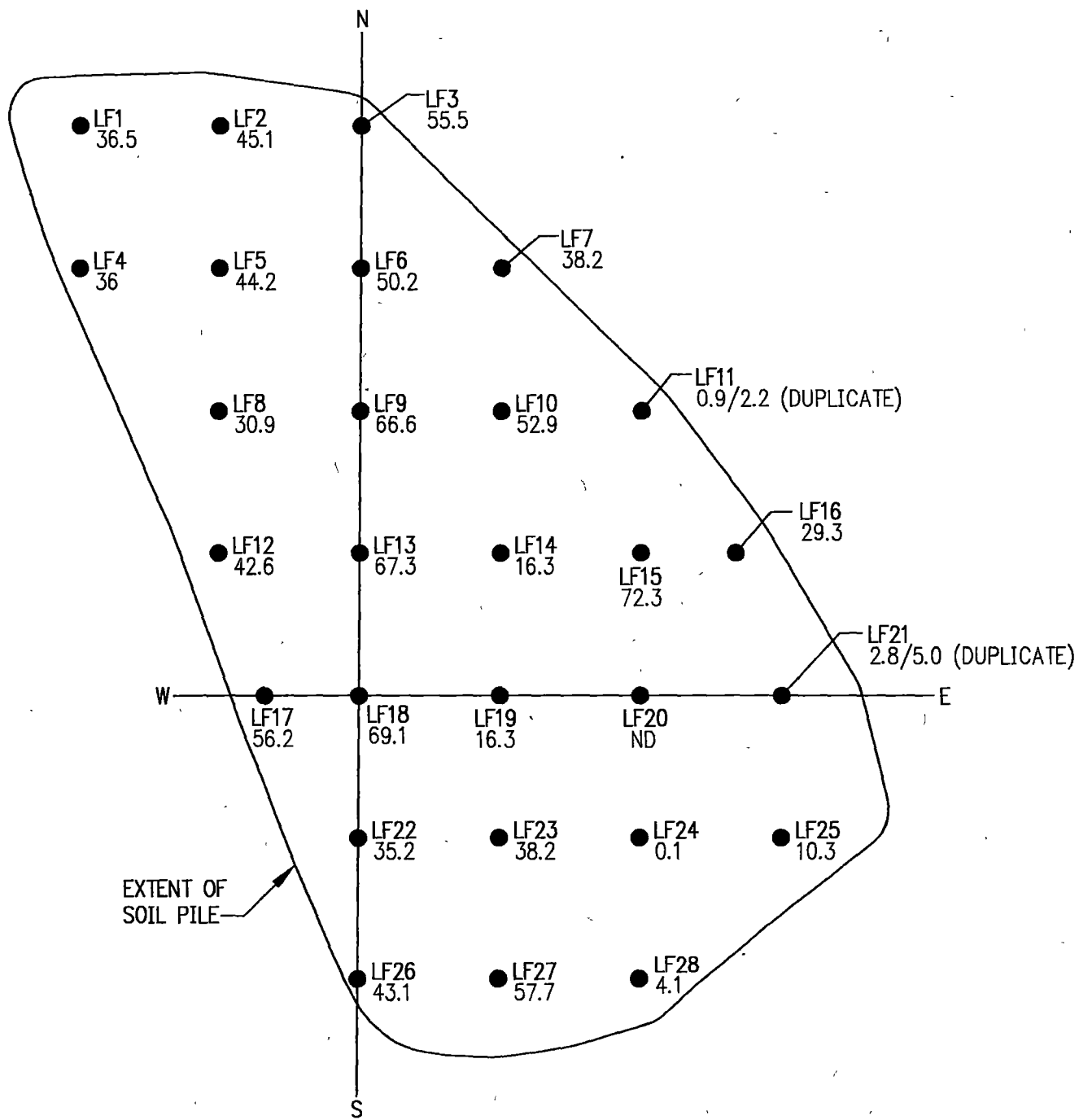
Based on the United States Environmental Protection Agency's (EPA) review of your Response to EPA's Comments and the Cleanup Plan submitted February 21, 2006, for the Former Delphi Olathe Battery Site located in Olathe, Kansas, EPA is satisfied that each of EPA's comments has been adequately addressed, and the Cleanup Plan for PCBs thus have met the requirements of the Toxic Substances Control Act (TSCA).

If you have any questions, please contact Mazzie Talley at 913-551-7518 or Tina Lowery at (913) 551-7964.

Sincerely,

Mark A. Smith
Chief, Chemical Risk Information Branch

cc: Frankie Arnwine
Kansas Department of Health and Environment



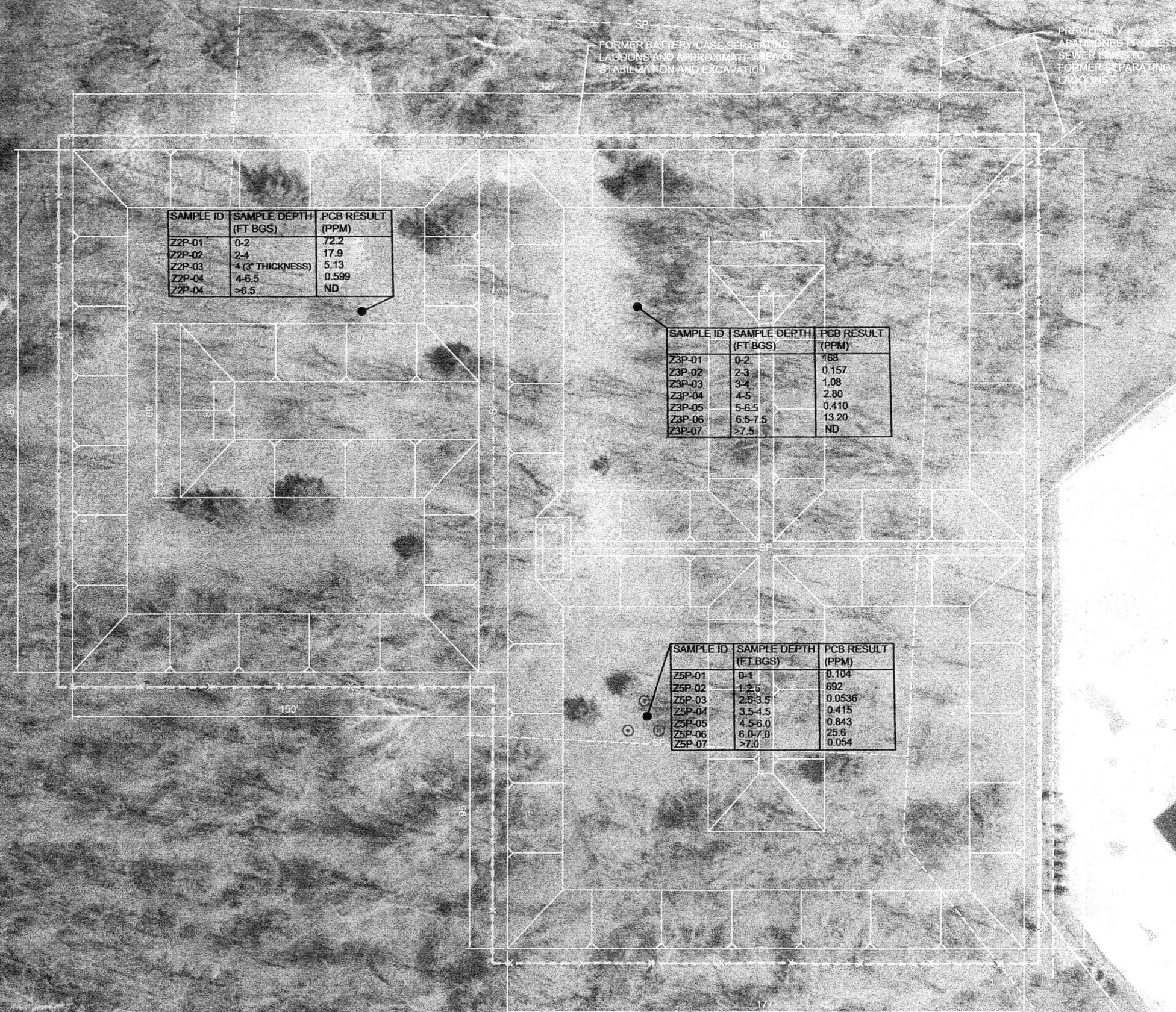
LEGEND

- LF20 SURFACE SOIL SAMPLING LOCATION
- ND TOTAL PCBs (mg/Kg)



Figure 4

PCB SOIL SAMPLING RESULTS
DELPHI LAGOON SOIL PILE
FOREST VIEW LANDFILL



LEGEND

○ PROPOSED TEST TRENCH LOCATION

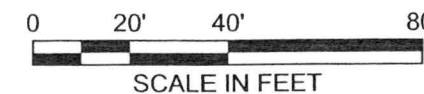


Figure 5
FORMER BATTERY CASE
SEPARATING LAGOON
PCB PROFILES
FORMER OLATHE BATTERY PLANT
OLATHE, KANSAS

Attachment B
Summary of Prior PCB Sampling Results

PCB Analytical Results
Concrete Matrix
Former Delphi Battery Plant
Olathe, Kansas

Sample ID	Date Collected	Date Analyzed	PCB Results			Off-Site Laboratory Results (ppm)
			1 PPM	5 PPM	50 PPM	
P-01	11/28/2005	11/29/2005	NA	0.29	NA	16.77
P-01	11/28/2005	11/30/2005	0.03	NA	NA	
P-02	11/28/2005	11/30/2005	0.39	NA	NA	
P-03	11/29/2005	11/30/2005	0.15	NA	NA	
P-04	11/29/2005	11/30/2005	-0.35	NA	NA	
P-04	11/29/2005	11/30/2005	NA	-0.63	NA	
P-04	11/29/2005	12/1/2005	NA	-0.84	NA	
P-05	11/29/2005	11/30/2005	0.28	NA	NA	
P-06	11/29/2005	11/30/2005	0.39	NA	NA	
P-07	11/29/2005	11/30/2005	0.65	NA	NA	
P-08	11/29/2005	11/30/2005	0.47	NA	NA	
P-09	11/29/2005	11/30/2005	NA	-0.06	NA	
P-10	11/29/2005	11/30/2005	NA	-1.05	NA	
P-11	11/29/2005	11/30/2005	NA	0.54	NA	
P-11	11/29/2005	12/1/2005	NA	0.45	NA	882
P-12	11/29/2005	11/30/2005	NA	-1.00	NA	
P-13	11/29/2005	11/30/2005	NA	-0.99	NA	
P-14	11/29/2005	11/30/2005	NA	-0.90	NA	
P-15	11/30/2005	11/30/2005	NA	-0.97	NA	
P-16	11/30/2005	11/30/2005	NA	-0.92	NA	
P-17	11/30/2005	11/30/2005	NA	-0.98	NA	
P-18	11/30/2005	11/30/2005	NA	-1.01	NA	
P-19	11/30/2005	11/30/2005	NA	-1.02	NA	
P-20	11/30/2005	11/30/2005	NA	-0.77	NA	
P-21	11/30/2005	11/30/2005	NA	-0.84	NA	
P-22	11/30/2005	11/30/2005	NA	0.21	NA	
P-22	11/30/2005	12/1/2005	NA	0.17	NA	0.269
P-23	11/30/2005	11/30/2005	NA	-0.81	NA	
P-24	11/30/2005	11/30/2005	NA	-0.70	NA	
P-25	11/30/2005	11/30/2005	NA	-0.94	NA	
P-26	11/30/2005	11/30/2005	NA	0.36	NA	
P-26	11/30/2005	12/1/2005	NA	0.53	NA	
P-27	11/30/2005	11/30/2005	NA	-0.99	NA	
P-28	11/30/2005	11/30/2005	NA	-0.99	NA	
P-29	11/30/2005	11/30/2005	NA	-0.99	NA	
P-30	11/30/2005	12/1/2005	NA	-1.10	NA	
P-31	11/30/2005	12/1/2005	NA	0.22	NA	
P-32	11/30/2005	12/1/2005	NA	0.01	NA	
P-33	11/30/2005	12/1/2005	NA	-1.11	NA	
P-33	11/30/2005	12/21/2005	NA	NA	-0.70	
P-34	11/30/2005	12/1/2005	NA	0.31	NA	0.269
P-35	12/1/2005	12/1/2005	NA	0.75	0.80	
P-36	12/1/2005	12/1/2005	NA	0.79	0.92	
P-37	12/1/2005	12/1/2005	0.52	0.96	NA	
P-38	12/1/2005	12/1/2005	NA	0.12	1.35	

Notes:

0.53 (positive value) - indicates PCB results below detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).

-0.53 (negative value) - indicates PCB results above detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).

NA - Not analyzed

PCB Analytical Results
Concrete Matrix
Former Delphi Battery Plant
Olathe, Kansas

Sample ID	Date Collected	Date Analyzed	PCB Results			Off-Site Laboratory Results (ppm)
			1 PPM	5 PPM	50 PPM	
P-39	12/1/2005	12/1/2005	NA	0.81	1.02	0.345
P-40	12/1/2005	12/1/2005	-0.78	-0.65	NA	
P-41	12/1/2005	12/1/2005	-0.69	-0.43	NA	
P-42	12/1/2005	12/1/2005	-0.84	-0.84	NA	
P-43	12/1/2005	12/1/2005	-0.18	0.36	NA	
P-44	12/1/2005	12/1/2005	-0.83	NA	NA	
P-45	12/1/2005	12/1/2005	0.50	NA	NA	
P-46	12/1/2005	12/2/2005	0.03	NA	NA	
P-47	12/1/2005	12/2/2005	0.32	NA	NA	
P-48	12/1/2005	12/2/2005	0.63	NA	NA	
P-49	12/1/2005	12/2/2005	-0.56	NA	NA	
P-50	12/1/2005	12/2/2005	0.27	NA	NA	
P-51	12/1/2005	12/2/2005	0.12	NA	NA	
P-52	12/1/2005	12/2/2005	-0.49	NA	NA	
P-53	12/1/2005	12/2/2005	-0.53	NA	NA	
P-54	12/1/2005	12/2/2005	NA	-1.21	NA	
P-54	12/1/2005	12/19/2005	NA	NA	0.50	
P-55	12/1/2005	12/2/2005	NA	-1.21	NA	
P-56	12/1/2005	12/2/2005	NA	0.30	NA	
P-57	12/1/2005	12/2/2005	NA	-0.72	NA	
P-58	12/1/2005	12/2/2005	NA	-0.41	NA	
P-59	12/2/2005	12/2/2005	NA	-1.21	NA	1.77
P-60	12/2/2005	12/2/2005	NA	-1.21	NA	
P-61	12/2/2005	12/2/2005	NA	-1.19	NA	
P-62	12/2/2005	12/5/2005	NA	-0.50	NA	
P-63	12/2/2005	12/5/2005	NA	-0.39	NA	
P-64	12/2/2005	12/5/2005	NA	-0.12	NA	
P-65	12/2/2005	12/5/2005	NA	-0.69	NA	
P-66	12/2/2005	12/5/2005	NA	0.07	NA	
P-67	12/2/2005	12/5/2005	NA	-0.54	NA	
P-68	12/2/2005	12/5/2005	NA	-0.30	NA	
P-69	12/2/2005	12/5/2005	NA	-0.57	NA	
P-69	12/2/2005	12/16/2005	NA	NA	-0.32	
P-70	12/2/2005	12/5/2005	NA	-0.32	NA	
P-71	12/2/2005	12/5/2005	NA	-0.24	NA	
P-72	12/2/2005	12/5/2005	NA	0.02	NA	
P-75	12/2/2005	12/12/2005	NA	-0.29	NA	
P-76	12/2/2005	12/12/2005	NA	-0.43	NA	
P-78	12/2/2005	12/12/2005	NA	0.04	NA	
P-79	12/2/2005	12/12/2005	NA	0.51	NA	
P-80	12/5/2005	12/5/2005	NA	-0.38	NA	
P-81	12/5/2005	12/5/2005	NA	-0.35	NA	
P-82	12/5/2005	12/5/2005	NA	-0.17	NA	
P-83	12/5/2005	12/5/2005	NA	0.42	NA	
P-84	12/5/2005	12/5/2005	NA	0.04	NA	

Notes:

0.53 (positive value) - indicates PCB results below detection limit (i.e. 1 PPM, 5PPM, or 50 PPM)
-0.53 (negative value) - indicates PCB results above detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).
NA - Not analyzed

PCB Analytical Results
Concrete Matrix
Former Delphi Battery Plant
Olathe, Kansas

Sample ID	Date Collected	Date Analyzed	PCB Results			Off-Site Laboratory Results (ppm)
			1 PPM	5 PPM	50 PPM	
P-85	12/5/2005	12/5/2005	NA	-0.29	NA	1.40
P-86	12/5/2005	12/5/2005	NA	-0.11	NA	
P-87	12/5/2005	12/5/2005	NA	-0.29	NA	
P-88	12/5/2005	12/5/2005	NA	0.15	NA	
P-89	12/5/2005	12/12/2005	NA	-0.56	NA	
P-90	12/5/2005	12/12/2005	NA	0.15	NA	
P-91	12/5/2005	12/12/2005	NA	-0.41	NA	
P-92	12/5/2005	12/12/2005	NA	0.47	NA	
P-95	12/5/2005	12/12/2005	NA	-0.28	NA	
P-95	12/5/2005	12/12/2005	NA	NA	0.22	
P-98	12/12/2005	12/12/2005	NA	-0.24	NA	
P-99	12/12/2005	12/12/2005	NA	-0.82	NA	
P-100	12/12/2005	12/12/2005	NA	0.53	NA	
P-101	12/12/2005	12/12/2005	NA	0.43	NA	
P-102	12/12/2005	12/12/2005	NA	-0.68	NA	
P-103	12/12/2005	12/12/2005	NA	0.74	NA	0.483
P-104	12/12/2005	12/12/2005	NA	-0.62	NA	
P-105	12/12/2005	12/12/2005	NA	0.76	NA	
P-106	12/12/2005	12/12/2005	NA	-0.67	NA	
P-107	12/12/2005	12/12/2005	NA	0.51	NA	
P-108	12/12/2005	12/12/2005	NA	-0.39	NA	15.50
P-108	12/12/2005	12/15/2005	NA	NA	0.22	
P-109	12/12/2005	12/13/2005	NA	-0.09	NA	
P-110	12/12/2005	12/13/2005	NA	0.25	NA	
P-111	12/12/2005	12/13/2005	NA	-0.80	NA	
P-111	12/12/2005	12/15/2005	NA	NA	0.22	644
P-112	12/12/2005	12/13/2005	NA	-0.45	NA	
P-113	12/12/2005	12/13/2005	NA	-0.62	NA	
P-114	12/12/2005	12/13/2005	NA	-0.64	NA	
P-115	12/12/2005	12/13/2005	NA	-0.97	NA	
P-116	12/12/2005	12/13/2005	NA	-0.95	NA	0.255
P-116	12/12/2005	12/16/2005	NA	NA	-0.07	
P-117	12/12/2005	12/13/2005	NA	-0.16	NA	
P-117	12/12/2005	12/15/2005	NA	NA	1.14	
P-118	12/12/2005	12/13/2005	NA	0.13	NA	
P-119	12/13/2005	12/13/2005	NA	-0.16	NA	0.11
P-119	12/13/2005	12/15/2005	NA	NA	0.11	
P-120	12/13/2005	12/13/2005	NA	-0.50	NA	
P-121	12/13/2005	12/13/2005	NA	-0.48	NA	
P-122	12/13/2005	12/13/2005	NA	0.19	NA	
P-123	12/13/2005	12/13/2005	NA	-0.69	NA	0.08
P-124	12/13/2005	12/13/2005	NA	0.28	NA	
P-125	12/13/2005	12/13/2005	NA	0.08	NA	
P-126	12/13/2005	12/13/2005	NA	0.08	NA	
P-127	12/13/2005	12/13/2005	NA	-0.51	NA	

Notes:

0.53 (positive value) - indicates PCB results below detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).

-0.53 (negative value) - indicates PCB results above detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).

NA - Not analyzed

PCB Analytical Results
Concrete Matrix
Former Delphi Battery Plant
Olathe, Kansas

Sample ID	Date Collected	Date Analyzed	PCB Results			Off-Site Laboratory Results (ppm)
			1 PPM	5 PPM	50 PPM	
P-128	12/13/2005	12/13/2005	NA	-0.53	NA	Non Detect 0.651
P-128	12/13/2005	12/15/2005	NA	NA	2.20	
P-129	12/13/2005	12/13/2005	NA	-0.38	NA	
P-130	12/13/2005	12/13/2005	NA	0.13	NA	
P-131	12/13/2005	12/13/2005	NA	-0.06	NA	
P-132	12/13/2005	12/13/2005	NA	0.32	NA	
P-133	12/13/2005	12/13/2005	NA	0.37	NA	
P-134	12/13/2005	12/13/2005	NA	0.21	NA	
P-135	12/13/2005	12/14/2005	NA	0.51	NA	
P-136	12/13/2005	12/14/2005	NA	0.20	NA	
P-137	12/13/2005	12/14/2005	NA	-0.28	NA	2.54
P-137	12/13/2005	12/15/2005	NA	NA	0.08	
P-138	12/13/2005	12/14/2005	NA	-0.78	NA	
P-139	12/13/2005	12/14/2005	NA	-0.57	NA	
P-140	12/14/2005	12/14/2005	NA	0.67	NA	
P-141	12/14/2005	12/14/2005	NA	-0.63	NA	
P-141	12/14/2005	12/15/2005	NA	NA	0.03	
P-142	12/14/2005	12/14/2005	NA	-0.17	NA	
P-144	12/14/2005	12/14/2005	NA	0.13	NA	
P-145	12/14/2005	12/14/2005	NA	0.24	NA	0.29
P-146	12/14/2005	12/14/2005	NA	0.53	NA	
P-147	12/14/2005	12/14/2005	NA	0.27	NA	
P-148	12/14/2005	12/14/2005	NA	0.09	NA	
P-149	12/14/2005	12/14/2005	NA	-0.51	NA	
P-149	12/14/2005	12/15/2005	NA	NA	0.18	
P-150	12/14/2005	12/14/2005	NA	0.64	NA	
P-151	12/14/2005	12/14/2005	NA	-0.45	NA	
P-152	12/14/2005	12/16/2005	NA	-0.73	NA	
P-153	12/14/2005	12/14/2005	NA	-0.65	NA	3.31
P-154	12/14/2005	12/15/2005	NA	0.10	NA	
P-155	12/14/2005	12/16/2005	NA	-0.79	NA	
P-156	12/14/2005	12/14/2005	NA	-0.67	NA	
P-157	12/14/2005	12/14/2005	NA	-0.41	NA	
P-158	12/14/2005	12/14/2005	NA	0.43	NA	
P-159	12/14/2005	12/14/2005	NA	0.65	NA	
P-160	12/14/2005	12/15/2005	NA	0.26	NA	
P-161	12/14/2005	12/15/2005	NA	0.51	NA	
P-162	12/14/2005	12/15/2005	NA	0.44	NA	3.12
P-163	12/14/2005	12/15/2005	NA	0.15	NA	
P-164	12/14/2005	12/15/2005	NA	1.47	NA	
P-165	12/14/2005	12/15/2005	NA	0.21	NA	
P-166	12/14/2005	12/19/2005	NA	0.43	NA	
P-167	12/14/2005	12/15/2005	NA	-0.31	NA	
P-168	12/14/2005	12/15/2005	NA	0.83	NA	
P-169	12/14/2005	12/15/2005	NA	0.92	NA	

Notes.

0.53 (positive value) - indicates PCB results below detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).

-0.53 (negative value) - indicates PCB results above detection limit (i.e. 1 PPM, 5PPM, or 50 PPM)

NA - Not analyzed

**PCB Analytical Results
Concrete Matrix
Former Delphi Battery Plant
Olathe, Kansas**

Sample ID	Date Collected	Date Analyzed	PCB Results			Off-Site Laboratory Results (ppm)
			1 PPM	5 PPM	50 PPM	
P-170	12/15/2005	12/16/2005	NA	1.06	NA	
P-171	12/15/2005	12/16/2005	NA	0.41	NA	0.29
P-172	12/15/2005	12/16/2005	NA	0.46	NA	1.76
P-173	12/15/2005	12/16/2005	NA	1.44	NA	
P-174	12/15/2005	12/16/2005	NA	2.37	NA	
P-175	12/15/2005	12/16/2005	NA	0.38	NA	
P-176	12/15/2005	12/16/2005	NA	-0.14	NA	
P-177	12/15/2005	12/16/2005	NA	-0.06	NA	
P-178	12/19/2005	12/19/2005	NA	0.09	NA	1.35
P-179	12/19/2005	12/19/2005	NA	0.60	NA	
P-180	12/19/2005	12/19/2005	NA	0.79	NA	0.06
P-181	12/19/2005	12/19/2005	0.36	NA	NA	
P-182	12/19/2005	12/19/2005	0.55	NA	NA	0.05
P-183	12/19/2005	12/19/2005	0.21	NA	NA	
P-184	12/20/2005	12/20/2005	0.68	NA	NA	Non Detect
P-185	12/20/2005	12/20/2005	0.61	NA	NA	
P-186	12/20/2005	12/20/2005	NA	0.54	NA	Non Detect
P-187	12/20/2005	12/21/2005	0.09	NA	NA	
P-188	12/20/2005	12/20/2005	0.69	NA	NA	
P-189	12/20/2005	12/20/2005	0.17	NA	NA	1.09
P-190	12/20/2005	12/20/2005	0.29	NA	NA	0.35
P-191	12/20/2005	12/21/2005	0.45	NA	NA	
P-192	12/20/2005	12/20/2005	-0.87	-0.63	NA	5.82
P-193	12/21/2005	12/21/2005	NA	0.27	NA	
P-194	12/21/2005	12/21/2005	NA	NA	0.15	
P-195	12/21/2005	12/21/2005	NA	NA	0.02	
P-196	12/21/2005	12/21/2005	NA	NA	-0.12	
P-197	12/21/2005	12/21/2005	NA	NA	0.37	
P-198	12/21/2005	12/21/2005	NA	NA	0.33	
P-199	12/21/2005	12/21/2005	NA	NA	0.18	
P-200	12/21/2005	12/21/2005	NA	NA	0.13	

Notes:

0.53 (positive value) - indicates PCB results below detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).

-0.53 (negative value) - indicates PCB results above detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).

NA - Not analyzed

**PCB Analytical Results
Soil Beneath Concrete Pad
Former Delphi Battery Plant
Olathe, Kansas**

Sample ID	Sample Depth	Date Collected	Date Analyzed	PCB Results			Off-Site Laboratory Results (ppm)	Soil Description
				1 PPM	5 PPM	50 PPM		
P-20 / SS-1	0 - 0.5 ft	12/1/2005	12/2/2005	-0.96	-0.73	NA	1.65	Brown clay, trace gravel
P-20 / SS-2	0.5 - 1.0 ft	12/1/2005	12/2/2005	-0.40	0.12	NA	1.26	Brown clay, trace gravel
P-20 / SS-3	1.0 - 2.0 ft	12/1/2005	12/2/2005	0.39	0.66	NA	NA	Dark brown silt, trace clay

Notes:

0.12 (positive value) - indicates PCB results below detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).

-0.96 (negative value) - indicates PCB results above detection limit (i.e. 1 PPM, 5PPM, or 50 PPM).

NA - Not analyzed

**PCB Analytical Results
Soil From Treatment Piles
Former Delphi Battery Plant
Olathe, Kansas**

Sample ID	Date Collected	Date Analyzed	PCB Results (mg/kg)
TP-01	1/11/2006	1/12/2006	53.2
TP-02	1/11/2006	1/12/2006	114.0
TP-03	1/11/2006	1/12/2006	46.6
TP-04	1/11/2006	1/12/2006	74.3
TP-05	1/11/2006	1/12/2006	65.2
TP-06	1/11/2006	1/12/2006	83.4
TP-07	1/11/2006	1/12/2006	107.0
TP2-01	1/11/2006	1/13/2006	75.9
TP2-02	1/11/2006	1/13/2006	16.8
TP2-03	1/11/2006	1/13/2006	19.8
TP3 East	1/20/2006	1/26/2006	53.0
TP3 West	1/20/2006	1/26/2006	73.4
TP4 East	1/20/2006	1/26/2006	61.1
TP4 West	1/20/2006	1/26/2006	79.8
UTP5 North	1/20/2006	1/26/2006	86.5
UTP5 Central	1/20/2006	1/26/2006	89.7
UTP5 South	1/20/2006	1/26/2006	17.5

Notes:

NA - Not analyzed

Attachment C
Analytical Data Packages

January 23, 2006

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114


RE: Project: DELPHI
Pace Project No.: 604149

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on January 19, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

angela.brown@pacelabs.com

Arkansas Certification Number: 05-008-0

California Certification Number: 02109CA

Illinois Certification Number: 001191

Iowa Certification Number: 118

Kansas/NELAP Certification Number: E-10116

Louisiana Certification Number: 03055

Minnesota Certification Number: 020-999-394

Oklahoma Certification Number: 9205/9935

Utah Certification Number: 9135995665

Enclosures

REPORT OF LABORATORY ANALYSIS

Page 1 of 42

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SAMPLE SUMMARY

Project: DELPHI
Pace Project No.: 604149

Lab ID	Sample ID	Matrix	Date Collected	Date Received
604149001	L-1	Solid	01/19/06 13:00	01/19/06 16:58
604149002	L-2	Solid	01/19/06 13:08	01/19/06 16:58
604149003	L-3	Solid	01/19/06 13:15	01/19/06 16:58
604149004	L-4	Solid	01/19/06 13:20	01/19/06 16:58
604149005	L-5	Solid	01/19/06 13:27	01/19/06 16:58
604149006	L-6	Solid	01/19/06 13:35	01/19/06 16:58
604149007	L-7	Solid	01/19/06 13:40	01/19/06 16:58
604149008	L-8	Solid	01/19/06 13:47	01/19/06 16:58
604149009	L-9	Solid	01/19/06 13:56	01/19/06 16:58
604149010	L-10	Solid	01/19/06 14:03	01/19/06 16:58
604149011	L-11	Solid	01/19/06 14:10	01/19/06 16:58
604149012	L-12	Solid	01/19/06 14:15	01/19/06 16:58
604149013	L-13	Solid	01/19/06 14:21	01/19/06 16:58
604149014	L-14	Solid	01/19/06 14:28	01/19/06 16:58
604149015	L-15	Solid	01/19/06 14:34	01/19/06 16:58
604149016	L-16	Solid	01/19/06 14:39	01/19/06 16:58
604149017	L-17	Solid	01/19/06 14:45	01/19/06 16:58
604149018	L-18	Solid	01/19/06 14:51	01/19/06 16:58
604149019	L-19	Solid	01/19/06 14:55	01/19/06 16:58
604149020	L-20	Solid	01/19/06 15:00	01/19/06 16:58
604149021	L-21	Solid	01/19/06 15:06	01/19/06 16:58
604149022	L-22	Solid	01/19/06 15:15	01/19/06 16:58
604149023	L-23	Solid	01/19/06 15:22	01/19/06 16:58
604149024	L-24	Solid	01/19/06 15:31	01/19/06 16:58
604149025	L-25	Solid	01/19/06 15:35	01/19/06 16:58
604149026	L-26	Solid	01/19/06 15:40	01/19/06 16:58
604149027	L-27	Solid	01/19/06 15:45	01/19/06 16:58
604149028	L-28	Solid	01/19/06 16:00	01/19/06 16:58
604149029	DUP-1	Solid	01/19/06 00:00	01/19/06 16:58
604149030	DUP-2	Solid	01/19/06 00:00	01/19/06 16:58

REPORT OF LABORATORY ANALYSIS

Page 2 of 42

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SAMPLE ANALYTE COUNT

Project: DELPHI

Pace Project No.: 604149

Lab ID	Sample ID	Method	Analytes Reported
604149001	L-1	ASTM D2974-87	1
		EPA 8082	9
604149002	L-2	ASTM D2974-87	1
		EPA 8082	9
604149003	L-3	ASTM D2974-87	1
		EPA 8082	9
604149004	L-4	ASTM D2974-87	1
		EPA 8082	9
604149005	L-5	ASTM D2974-87	1
		EPA 8082	9
604149006	L-6	ASTM D2974-87	1
		EPA 8082	9
604149007	L-7	ASTM D2974-87	1
		EPA 8082	9
604149008	L-8	ASTM D2974-87	1
		EPA 8082	9
604149009	L-9	ASTM D2974-87	1
		EPA 8082	9
604149010	L-10	ASTM D2974-87	1
		EPA 8082	9
604149011	L-11	ASTM D2974-87	1
		EPA 8082	9
604149012	L-12	ASTM D2974-87	1
		EPA 8082	9
604149013	L-13	ASTM D2974-87	1
		EPA 8082	9
604149014	L-14	ASTM D2974-87	1
		EPA 8082	9
604149015	L-15	ASTM D2974-87	1
		EPA 8082	9
604149016	L-16	ASTM D2974-87	1
		EPA 8082	9
604149017	L-17	ASTM D2974-87	1
		EPA 8082	9
604149018	L-18	ASTM D2974-87	1
		EPA 8082	9
604149019	L-19	ASTM D2974-87	1

REPORT OF LABORATORY ANALYSIS

Page 3 of 42

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SAMPLE ANALYTE COUNT

Project: DELPHI

Pace Project No.: 604149

Lab ID	Sample ID	Method	Analytes Reported
604149019	L-19	EPA 8082	9
604149020	L-20	ASTM D2974-87	1
		EPA 8082	9
604149021	L-21	ASTM D2974-87	1
		EPA 8082	9
604149022	L-22	ASTM D2974-87	1
		EPA 8082	9
604149023	L-23	ASTM D2974-87	1
		EPA 8082	9
604149024	L-24	ASTM D2974-87	1
		EPA 8082	9
604149025	L-25	ASTM D2974-87	1
		EPA 8082	9
604149026	L-26	ASTM D2974-87	1
		EPA 8082	9
604149027	L-27	ASTM D2974-87	1
		EPA 8082	9
604149028	L-28	ASTM D2974-87	1
		EPA 8082	9
604149029	DUP-1	ASTM D2974-87	1
		EPA 8082	9
604149030	DUP-2	ASTM D2974-87	1
		EPA 8082	9

REPORT OF LABORATORY ANALYSIS

Page 4 of 42

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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-1

Lab ID: 604149001

Collected: 01/19/06 13:00

Received: 01/19/06 16:58

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 15:15	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 15:15	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 15:15	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 15:15	53469-21-9	
PCB-1248 (Aroclor 1248)	36500	ug/kg	4340	100	01/20/06 00:00	01/21/06 15:15	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 15:15	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 15:15	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/20/06 00:00	01/21/06 15:15	877-09-8	1
Decachlorobiphenyl (S)	0 %		28-150	100	01/20/06 00:00	01/21/06 15:15	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	24.2 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-2 Lab ID: 604149002 Collected: 01/19/06 13:08 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4060	100	01/20/06 00:00	01/21/06 15:32	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4060	100	01/20/06 00:00	01/21/06 15:32	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4060	100	01/20/06 00:00	01/21/06 15:32	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4060	100	01/20/06 00:00	01/21/06 15:32	53469-21-9	
PCB-1248 (Aroclor 1248)	45100	ug/kg	4060	100	01/20/06 00:00	01/21/06 15:32	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4060	100	01/20/06 00:00	01/21/06 15:32	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4060	100	01/20/06 00:00	01/21/06 15:32	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 15:32	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 15:32	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	18.9 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-3

Lab ID: 604149003

Collected: 01/19/06 13:15

Received: 01/19/06 16:58

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4470	100	01/20/06 00:00	01/21/06 15:50	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4470	100	01/20/06 00:00	01/21/06 15:50	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4470	100	01/20/06 00:00	01/21/06 15:50	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4470	100	01/20/06 00:00	01/21/06 15:50	53469-21-9	
PCB-1248 (Aroclor 1248)	55500	ug/kg	4470	100	01/20/06 00:00	01/21/06 15:50	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4470	100	01/20/06 00:00	01/21/06 15:50	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4470	100	01/20/06 00:00	01/21/06 15:50	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/20/06 00:00	01/21/06 15:50	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	100	01/20/06 00:00	01/21/06 15:50	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	26.2 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-4 Lab ID: 604149004 Collected: 01/19/06 13:20 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 16:07	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 16:07	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 16:07	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 16:07	53469-21-9	
PCB-1248 (Aroclor 1248)	36000	ug/kg	4340	100	01/20/06 00:00	01/21/06 16:07	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 16:07	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4340	100	01/20/06 00:00	01/21/06 16:07	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 16:07	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 16:07	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	24.0	%	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-5

Lab ID: 604149005

Collected: 01/19/06 13:27

Received: 01/19/06 16:58

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
			Analytical Method: EPA 8082 Preparation Method: EPA 3550					
PCB-1016 (Aroclor 1016)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 16:25	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 16:25	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 16:25	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 16:25	53469-21-9	
PCB-1248 (Aroclor 1248)	44200	ug/kg	4270	100	01/20/06 00:00	01/21/06 16:25	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 16:25	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 16:25	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/20/06 00:00	01/21/06 16:25	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	100	01/20/06 00:00	01/21/06 16:25	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	22.7 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-6

Lab ID: 604149006

Collected: 01/19/06 13:35

Received: 01/19/06 16:58

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4530	100	01/20/06 00:00	01/21/06 16:42	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4530	100	01/20/06 00:00	01/21/06 16:42	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4530	100	01/20/06 00:00	01/21/06 16:42	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4530	100	01/20/06 00:00	01/21/06 16:42	53469-21-9	
PCB-1248 (Aroclor 1248)	50200	ug/kg	4530	100	01/20/06 00:00	01/21/06 16:42	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4530	100	01/20/06 00:00	01/21/06 16:42	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4530	100	01/20/06 00:00	01/21/06 16:42	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 16:42	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 16:42	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	27.2 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI
Pace Project No.: 604149

Sample: L-7 Lab ID: 604149007 Collected: 01/19/06 13:40 Received: 01/19/06 16:58 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4330	100	01/20/06 00:00	01/21/06 16:59	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4330	100	01/20/06 00:00	01/21/06 16:59	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4330	100	01/20/06 00:00	01/21/06 16:59	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4330	100	01/20/06 00:00	01/21/06 16:59	53469-21-9	
PCB-1248 (Aroclor 1248)	38200	ug/kg	4330	100	01/20/06 00:00	01/21/06 16:59	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4330	100	01/20/06 00:00	01/21/06 16:59	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4330	100	01/20/06 00:00	01/21/06 16:59	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 16:59	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 16:59	2051-24-3	2

Percent Moisture Analytical Method: ASTM D2974-87

Percent Moisture	24.0	%	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-8 Lab ID: 604149008 Collected: 01/19/06 13:47 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4420	100	01/20/06 00:00	01/21/06 17:17	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4420	100	01/20/06 00:00	01/21/06 17:17	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4420	100	01/20/06 00:00	01/21/06 17:17	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4420	100	01/20/06 00:00	01/21/06 17:17	53469-21-9	
PCB-1248 (Aroclor 1248)	30900	ug/kg	4420	100	01/20/06 00:00	01/21/06 17:17	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4420	100	01/20/06 00:00	01/21/06 17:17	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4420	100	01/20/06 00:00	01/21/06 17:17	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 17:17	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 17:17	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	25.5	%	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-9 Lab ID: 604149009 Collected: 01/19/06 13:56 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB		Analytical Method: EPA 8082 Preparation Method: EPA 3550						
PCB-1016 (Aroclor 1016)	ND	ug/kg	4480	100	01/20/06 00:00	01/21/06 17:34	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4480	100	01/20/06 00:00	01/21/06 17:34	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4480	100	01/20/06 00:00	01/21/06 17:34	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4480	100	01/20/06 00:00	01/21/06 17:34	53469-21-9	
PCB-1248 (Aroclor 1248)	66600	ug/kg	4480	100	01/20/06 00:00	01/21/06 17:34	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4480	100	01/20/06 00:00	01/21/06 17:34	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4480	100	01/20/06 00:00	01/21/06 17:34	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/20/06 00:00	01/21/06 17:34	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	100	01/20/06 00:00	01/21/06 17:34	2051-24-3	3

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	26.5 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI
Pace Project No.: 604149

Sample: L-10 Lab ID: 604149010 Collected: 01/19/06 14:03 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4280	100	01/20/06 00:00	01/21/06 17:51	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4280	100	01/20/06 00:00	01/21/06 17:51	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4280	100	01/20/06 00:00	01/21/06 17:51	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4280	100	01/20/06 00:00	01/21/06 17:51	53469-21-9	
PCB-1248 (Aroclor 1248)	52900	ug/kg	4280	100	01/20/06 00:00	01/21/06 17:51	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4280	100	01/20/06 00:00	01/21/06 17:51	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4280	100	01/20/06 00:00	01/21/06 17:51	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 17:51	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 17:51	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	23.0	%	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-11

Lab ID: 604149011

Collected: 01/19/06 14:10

Received: 01/19/06 16:58

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	42.9	1	01/20/06 00:00	01/21/06 10:14	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	42.9	1	01/20/06 00:00	01/21/06 10:14	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	42.9	1	01/20/06 00:00	01/21/06 10:14	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	42.9	1	01/20/06 00:00	01/21/06 10:14	53469-21-9	
PCB-1248 (Aroclor 1248)	852	ug/kg	42.9	1	01/20/06 00:00	01/21/06 10:14	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	42.9	1	01/20/06 00:00	01/21/06 10:14	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	42.9	1	01/20/06 00:00	01/21/06 10:14	11096-82-5	
Tetrachloro-m-xylene (S)	84	%	33-135	1	01/20/06 00:00	01/21/06 10:14	877-09-8	
Decachlorobiphenyl (S)	91	%	28-150	1	01/20/06 00:00	01/21/06 10:14	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	23.2 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI
Pace Project No.: 604149

Sample: L-12 Lab ID: 604149012 Collected: 01/19/06 14:15 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4500	100	01/20/06 00:00	01/21/06 18:09	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4500	100	01/20/06 00:00	01/21/06 18:09	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4500	100	01/20/06 00:00	01/21/06 18:09	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4500	100	01/20/06 00:00	01/21/06 18:09	53469-21-9	
PCB-1248 (Aroclor 1248)	42600	ug/kg	4500	100	01/20/06 00:00	01/21/06 18:09	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4500	100	01/20/06 00:00	01/21/06 18:09	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4500	100	01/20/06 00:00	01/21/06 18:09	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 18:09	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 18:09	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	26.7 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-13

Lab ID: 604149013

Collected: 01/19/06 14:21

Received: 01/19/06 16:58

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4390	100	01/20/06 00:00	01/21/06 18:26	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4390	100	01/20/06 00:00	01/21/06 18:26	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4390	100	01/20/06 00:00	01/21/06 18:26	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4390	100	01/20/06 00:00	01/21/06 18:26	53469-21-9	
PCB-1248 (Aroclor 1248)	67300	ug/kg	4390	100	01/20/06 00:00	01/21/06 18:26	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4390	100	01/20/06 00:00	01/21/06 18:26	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4390	100	01/20/06 00:00	01/21/06 18:26	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 18:26	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 18:26	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	25.0 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-14 Lab ID: 604149014 Collected: 01/19/06 14:28 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	3950	100	01/20/06 00:00	01/21/06 18:44	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	3950	100	01/20/06 00:00	01/21/06 18:44	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	3950	100	01/20/06 00:00	01/21/06 18:44	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	3950	100	01/20/06 00:00	01/21/06 18:44	53469-21-9	
PCB-1248 (Aroclor 1248)	16300	ug/kg	3950	100	01/20/06 00:00	01/21/06 18:44	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	3950	100	01/20/06 00:00	01/21/06 18:44	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	3950	100	01/20/06 00:00	01/21/06 18:44	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 18:44	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 18:44	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	16.5 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-15

Lab ID: 604149015

Collected: 01/19/06 14:34

Received: 01/19/06 16:58

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4080	100	01/20/06 00:00	01/21/06 19:01	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4080	100	01/20/06 00:00	01/21/06 19:01	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4080	100	01/20/06 00:00	01/21/06 19:01	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4080	100	01/20/06 00:00	01/21/06 19:01	53469-21-9	
PCB-1248 (Aroclor 1248)	72300	ug/kg	4080	100	01/20/06 00:00	01/21/06 19:01	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4080	100	01/20/06 00:00	01/21/06 19:01	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4080	100	01/20/06 00:00	01/21/06 19:01	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/20/06 00:00	01/21/06 19:01	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	100	01/20/06 00:00	01/21/06 19:01	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	19.2 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-16

Lab ID: 604149016

Collected: 01/19/06 14:39

Received: 01/19/06 16:58

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4220	100	01/20/06 00:00	01/21/06 19:18	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4220	100	01/20/06 00:00	01/21/06 19:18	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4220	100	01/20/06 00:00	01/21/06 19:18	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4220	100	01/20/06 00:00	01/21/06 19:18	53469-21-9	
PCB-1248 (Aroclor 1248)	29300	ug/kg	4220	100	01/20/06 00:00	01/21/06 19:18	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4220	100	01/20/06 00:00	01/21/06 19:18	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4220	100	01/20/06 00:00	01/21/06 19:18	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/20/06 00:00	01/21/06 19:18	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	100	01/20/06 00:00	01/21/06 19:18	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	21.8 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI
Pace Project No.: 604149

Sample: L-17 Lab ID: 604149017 Collected: 01/19/06 14:45 Received 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:36	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:36	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:36	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:36	53469-21-9	
PCB-1248 (Aroclor 1248)	56200	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:36	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:36	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:36	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/20/06 00:00	01/21/06 19:36	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	100	01/20/06 00:00	01/21/06 19:36	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	25.2 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-18 Lab ID: 604149018 Collected: 01/19/06 14:51 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB		Analytical Method: EPA 8082 Preparation Method: EPA 3550						
PCB-1016 (Aroclor 1016)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:53	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:53	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:53	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:53	53469-21-9	
PCB-1248 (Aroclor 1248)	69100	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:53	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:53	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4410	100	01/20/06 00:00	01/21/06 19:53	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 19:53	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 19:53	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	25.3	%	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-19 Lab ID: 604149019 Collected: 01/19/06 14:55 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	2170	50	01/20/06 00:00	01/21/06 20:11	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	2170	50	01/20/06 00:00	01/21/06 20:11	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	2170	50	01/20/06 00:00	01/21/06 20:11	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	2170	50	01/20/06 00:00	01/21/06 20:11	53469-21-9	
PCB-1248 (Aroclor 1248)	16300	ug/kg	2170	50	01/20/06 00:00	01/21/06 20:11	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	2170	50	01/20/06 00:00	01/21/06 20:11	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	2170	50	01/20/06 00:00	01/21/06 20:11	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	50	01/20/06 00:00	01/21/06 20:11	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	50	01/20/06 00:00	01/21/06 20:11	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	24.1	%	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-20 Lab ID: 604149020 Collected: 01/19/06 15:00 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND ug/kg		38.4	1	01/20/06 00:00	01/21/06 12:50	12674-11-2	
PCB-1221 (Aroclor 1221)	ND ug/kg		38.4	1	01/20/06 00:00	01/21/06 12:50	11104-28-2	
PCB-1232 (Aroclor 1232)	ND ug/kg		38.4	1	01/20/06 00:00	01/21/06 12:50	11141-16-5	
PCB-1242 (Aroclor 1242)	ND ug/kg		38.4	1	01/20/06 00:00	01/21/06 12:50	53469-21-9	
PCB-1248 (Aroclor 1248)	ND ug/kg		38.4	1	01/20/06 00:00	01/21/06 12:50	12672-29-6	
PCB-1254 (Aroclor 1254)	ND ug/kg		38.4	1	01/20/06 00:00	01/21/06 12:50	11097-69-1	
PCB-1260 (Aroclor 1260)	ND ug/kg		38.4	1	01/20/06 00:00	01/21/06 12:50	11096-82-5	
Tetrachloro-m-xylene (S)	87 %		33-135	1	01/20/06 00:00	01/21/06 12:50	877-09-8	
Decachlorobiphenyl (S)	91 %		28-150	1	01/20/06 00:00	01/21/06 12:50	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	14.3 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-21 Lab ID: 604149021 Collected: 01/19/06 15:06 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	734	10	01/20/06 00:00	01/20/06 20:58	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	734	10	01/20/06 00:00	01/20/06 20:58	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	734	10	01/20/06 00:00	01/20/06 20:58	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	734	10	01/20/06 00:00	01/20/06 20:58	53469-21-9	
PCB-1248 (Aroclor 1248)	2840	ug/kg	734	10	01/20/06 00:00	01/20/06 20:58	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	734	10	01/20/06 00:00	01/20/06 20:58	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	734	10	01/20/06 00:00	01/20/06 20:58	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	10	01/20/06 00:00	01/20/06 20:58	877-09-8	4
Decachlorobiphenyl (S)	0 %		28-150	10	01/20/06 00:00	01/20/06 20:58	2051-24-3	4

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	24.5 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI
Pace Project No.: 604149

Sample: L-22 Lab ID: 604149022 Collected: 01/19/06 15:15 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 15:18	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 15:18	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 15:18	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 15:18	53469-21-9	
PCB-1248 (Aroclor 1248)	35200	ug/kg	4270	100	01/20/06 00:00	01/21/06 15:18	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 15:18	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4270	100	01/20/06 00:00	01/21/06 15:18	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 15:18	877-09-8	4
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 15:18	2051-24-3	4

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	22.7 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-23 Lab ID: 604149023 Collected: 01/19/06 15:22 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4360	100	01/20/06 00:00	01/21/06 15:39	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4360	100	01/20/06 00:00	01/21/06 15:39	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4360	100	01/20/06 00:00	01/21/06 15:39	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4360	100	01/20/06 00:00	01/21/06 15:39	53469-21-9	
PCB-1248 (Aroclor 1248)	38200	ug/kg	4360	100	01/20/06 00:00	01/21/06 15:39	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4360	100	01/20/06 00:00	01/21/06 15:39	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4360	100	01/20/06 00:00	01/21/06 15:39	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/20/06 00:00	01/21/06 15:39	877-09-8	4
Decachlorobiphenyl (S)	0 %		28-150	100	01/20/06 00:00	01/21/06 15:39	2051-24-3	4

Percent Moisture

Analytical Method ASTM D2974-87

Percent Moisture	24.4 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-24 Lab ID: 604149024 Collected: 01/19/06 15:31 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry-weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	37.8	1	01/20/06 00:00	01/21/06 03:57	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	37.8	1	01/20/06 00:00	01/21/06 03:57	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	37.8	1	01/20/06 00:00	01/21/06 03:57	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	37.8	1	01/20/06 00:00	01/21/06 03:57	53469-21-9	
PCB-1248 (Aroclor 1248)	120	ug/kg	37.8	1	01/20/06 00:00	01/21/06 03:57	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	37.8	1	01/20/06 00:00	01/21/06 03:57	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	37.8	1	01/20/06 00:00	01/21/06 03:57	11096-82-5	
Tetrachloro-m-xylene (S) ⁺	82	%	33-135	1	01/20/06 00:00	01/21/06 03:57	877-09-8	
Decachlorobiphenyl (S)	93	%	28-150	1	01/20/06 00:00	01/21/06 03:57	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	12.8	%	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI
Pace Project No: 604149

Sample: L-25 Lab ID: 604149025 Collected: 01/19/06 15:35 Received: 01/19/06 16:58 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	2010	50	01/20/06 00:00	01/21/06 16:00	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	2010	50	01/20/06 00:00	01/21/06 16:00	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	2010	50	01/20/06 00 00	01/21/06 16:00	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	2010	50	01/20/06 00:00	01/21/06 16:00	53469-21-9	
PCB-1248 (Aroclor 1248)	10300	ug/kg	2010	50	01/20/06 00:00	01/21/06 16:00	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	2010	50	01/20/06 00:00	01/21/06 16:00	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	2010	50	01/20/06 00:00	01/21/06 16:00	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	50	01/20/06 00:00	01/21/06 16:00	877-09-8	4
Decachlorobiphenyl (S)	0	%	28-150	50	01/20/06 00:00	01/21/06 16 00	2051-24-3	4
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	18.1	%	0.10	1		01/20/06 00 00		

ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-26

Lab ID: 604149026

Collected: 01/19/06 15:40

Received: 01/19/06 16:58

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4300	100	01/20/06 00:00	01/21/06 16:21	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4300	100	01/20/06 00:00	01/21/06 16:21	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4300	100	01/20/06 00:00	01/21/06 16:21	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4300	100	01/20/06 00:00	01/21/06 16:21	53469-21-9	
PCB-1248 (Aroclor 1248)	43100	ug/kg	4300	100	01/20/06 00:00	01/21/06 16:21	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4300	100	01/20/06 00:00	01/21/06 16:21	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4300	100	01/20/06 00:00	01/21/06 16:21	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 16:21	877-09-8	4
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 16:21	2051-24-3	4

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	23.4 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-27 Lab ID: 604149027 Collected: 01/19/06 15:45 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4150	100	01/20/06 00:00	01/21/06 16:42	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4150	100	01/20/06 00:00	01/21/06 16:42	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4150	100	01/20/06 00:00	01/21/06 16:42	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4150	100	01/20/06 00:00	01/21/06 16:42	53469-21-9	
PCB-1248 (Aroclor 1248)	57700	ug/kg	4150	100	01/20/06 00:00	01/21/06 16:42	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4150	100	01/20/06 00:00	01/21/06 16:42	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4150	100	01/20/06 00:00	01/21/06 16:42	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/20/06 00:00	01/21/06 16:42	877-09-8	4
Decachlorobiphenyl (S)	0	%	28-150	100	01/20/06 00:00	01/21/06 16:42	2051-24-3	4

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	20.8 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: L-28 Lab ID: 604149028 Collected: 01/19/06 16:00 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND ug/kg		402	10	01/20/06 00:00	01/20/06 23:24	12674-11-2	
PCB-1221 (Aroclor 1221)	ND ug/kg		402	10	01/20/06 00:00	01/20/06 23:24	11104-28-2	
PCB-1232 (Aroclor 1232)	ND ug/kg		402	10	01/20/06 00:00	01/20/06 23:24	11141-16-5	
PCB-1242 (Aroclor 1242)	ND ug/kg		402	10	01/20/06 00:00	01/20/06 23:24	53469-21-9	
PCB-1248 (Aroclor 1248)	4070 ug/kg		402	10	01/20/06 00:00	01/20/06 23:24	12672-29-6	
PCB-1254 (Aroclor 1254)	ND ug/kg		402	10	01/20/06 00:00	01/20/06 23:24	11097-69-1	
PCB-1260 (Aroclor 1260)	ND ug/kg		402	10	01/20/06 00:00	01/20/06 23:24	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	10	01/20/06 00:00	01/20/06 23:24	877-09-8	4
Decachlorobiphenyl (S)	0 %		28-150	10	01/20/06 00:00	01/20/06 23:24	2051-24-3	4

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	18.0 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: DUP-1 Lab ID: 604149029 Collected: 01/19/06 00:00 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	414	10	01/20/06 00:00	01/20/06 23:45	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	414	10	01/20/06 00:00	01/20/06 23:45	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	414	10	01/20/06 00:00	01/20/06 23:45	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	414	10	01/20/06 00:00	01/20/06 23:45	53469-21-9	
PCB-1248 (Aroclor 1248)	2200	ug/kg	414	10	01/20/06 00:00	01/20/06 23:45	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	414	10	01/20/06 00:00	01/20/06 23:45	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	414	10	01/20/06 00:00	01/20/06 23:45	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	10	01/20/06 00:00	01/20/06 23:45	877-09-8	4
Decachlorobiphenyl (S)	0	%	28-150	10	01/20/06 00:00	01/20/06 23:45	2051-24-3	4

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	20.5	%	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI

Pace Project No.: 604149

Sample: DUP-2 Lab ID: 604149030 Collected: 01/19/06 00:00 Received: 01/19/06 16:58 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	392	10	01/20/06 00:00	01/21/06 00:06	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	392	10	01/20/06 00:00	01/21/06 00:06	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	392	10	01/20/06 00:00	01/21/06 00:06	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	392	10	01/20/06 00:00	01/21/06 00:06	53469-21-9	
PCB-1248 (Aroclor 1248)	4960	ug/kg	392	10	01/20/06 00:00	01/21/06 00:06	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	392	10	01/20/06 00:00	01/21/06 00:06	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	392	10	01/20/06 00:00	01/21/06 00:06	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	10	01/20/06 00:00	01/21/06 00:06	877-09-8	4
Decachlorobiphenyl (S)	0 %		28-150	10	01/20/06 00:00	01/21/06 00:06	2051-24-3	4

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	15.9 %	0.10	1	01/20/06 00:00
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ANALYTICAL RESULTS QUALIFIERS

Project: DELPHI

Pace Project No.: 604149

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

- [1] Surrogate result is not available due to sample dilution.
- [2] Surrogate result is not available due to sample dilution
- [3] Surrogate result is not available due to sample dilution
- [4] Surrogate diluted out.

QUALITY CONTROL DATA

Project: DELPHI
Pace Project No.: 604149

QC Batch: OEXT/1887 Analysis Method: EPA 8082
QC Batch Method: EPA 3550 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 604149001, 604149002, 604149003, 604149004, 604149005, 604149006, 604149007, 604149008, 604149009, 604149010, 604149011, 604149012, 604149013, 604149014, 604149015, 604149016, 604149017, 604149018, 604149019, 604149020

METHOD BLANK: 32829

Associated Lab Samples: 604149001, 604149002, 604149003, 604149004, 604149005, 604149006, 604149007, 604149008, 604149009, 604149010, 604149011, 604149012, 604149013, 604149014, 604149015, 604149016, 604149017, 604149018, 604149019, 604149020

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	85	33-135	
Decachlorobiphenyl (S)	%	87	28-150	

LABORATORY CONTROL SAMPLE: 32830

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	145	87	59-115	1
PCB-1260 (Aroclor 1260)	ug/kg	167	152	91	55-120	
Tetrachloro-m-xylene (S)	%			88	33-135	
Decachlorobiphenyl (S)	%			90	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
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QUALITY CONTROL DATA

Project: DELPHI

Pace Project No.: 604149

QC Batch: OEXT/1888

Analysis Method: EPA 8082

QC Batch Method: EPA 3550

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 604149021, 604149022, 604149023, 604149024, 604149025, 604149026, 604149027, 604149028, 604149029, 604149030

METHOD BLANK: 32833

Associated Lab Samples: 604149021, 604149022, 604149023, 604149024, 604149025, 604149026, 604149027, 604149028, 604149029, 604149030

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	89	33-135	
Decachlorobiphenyl (S)	%	103	28-150	

LABORATORY CONTROL SAMPLE: 32834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	172	103	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	163	98	55-120	
Tetrachloro-m-xylene (S)	%			89	33-135	
Decachlorobiphenyl (S)	%			105	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 32835

32836

Parameter	Units	604149021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	167	166	1820	1780	1095	1071	46-120	2	17 2
PCB-1260 (Aroclor 1260)	ug/kg	ND	167	166	1400	1420	837	854	33-136	2	21 2
Tetrachloro-m-xylene (S)	%						74	71	33-135		
Decachlorobiphenyl (S)	%						97	91	28-150		

QUALITY CONTROL DATA

Project: DELPHI

Pace Project No : 604149

QC Batch: PMST/1203

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 604149001, 604149002, 604149003, 604149004, 604149005, 604149006, 604149007, 604149008, 604149009, 604149010, 604149011, 604149012, 604149013, 604149014, 604149015, 604149016, 604149017, 604149018, 604149019

SAMPLE DUPLICATE: 33005

Parameter	Units	604149001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	24.2	23.6	3	20	

QUALITY CONTROL DATA

Project: DELPHI

Pace Project No.: 604149

QC Batch: PMST/1204

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 604149020, 604149021, 604149022, 604149023, 604149024, 604149025, 604149026, 604149027, 604149028, 604149029, 604149030

SAMPLE DUPLICATE: 33010

Parameter	Units	604149020 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.3	14.8	3	20	

QUALITY CONTROL DATA QUALIFIERS

Project: DELPHI

Pace Project No.: 604149

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

- [1] A matrix spike/matrix spike duplicate was not performed due to the need for sample dilution. Batch was acceptable based on LCS recoveries.
- [2] Results for this analyte was outside of acceptable MS/MSD recovery limits due to matrix interferences.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: DELPHI

Pace Project No.: 604149

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
604149001	L-1	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149002	L-2	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149003	L-3	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149004	L-4	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149005	L-5	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149006	L-6	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149007	L-7	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149008	L-8	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149009	L-9	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149010	L-10	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149011	L-11	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149012	L-12	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149013	L-13	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149014	L-14	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149015	L-15	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149016	L-16	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149017	L-17	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149018	L-18	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149019	L-19	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149020	L-20	EPA 3550	OEXT/1887	EPA 8082	GCSV/1420
604149021	L-21	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149022	L-22	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149023	L-23	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149024	L-24	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149025	L-25	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149026	L-26	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149027	L-27	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149028	L-28	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149029	DUP-1	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149030	DUP-2	EPA 3550	OEXT/1888	EPA 8082	GCSV/1421
604149001	L-1	ASTM D2974-87	PMST/1203		
604149002	L-2	ASTM D2974-87	PMST/1203		
604149003	L-3	ASTM D2974-87	PMST/1203		
604149004	L-4	ASTM D2974-87	PMST/1203		
604149005	L-5	ASTM D2974-87	PMST/1203		
604149006	L-6	ASTM D2974-87	PMST/1203		
604149007	L-7	ASTM D2974-87	PMST/1203		
604149008	L-8	ASTM D2974-87	PMST/1203		
604149009	L-9	ASTM D2974-87	PMST/1203		
604149010	L-10	ASTM D2974-87	PMST/1203		
604149011	L-11	ASTM D2974-87	PMST/1203		
604149012	L-12	ASTM D2974-87	PMST/1203		
604149013	L-13	ASTM D2974-87	PMST/1203		
604149014	L-14	ASTM D2974-87	PMST/1203		
604149015	L-15	ASTM D2974-87	PMST/1203		
604149016	L-16	ASTM D2974-87	PMST/1203		
604149017	L-17	ASTM D2974-87	PMST/1203		
604149018	L-18	ASTM D2974-87	PMST/1203		

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: DELPHI

Pace Project No.: 604149

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
604149019	L-19	ASTM D2974-87	PMST/1203		
604149020	L-20	ASTM D2974-87	PMST/1204		
604149021	L-21	ASTM D2974-87	PMST/1204		
604149022	L-22	ASTM D2974-87	PMST/1204		
604149023	L-23	ASTM D2974-87	PMST/1204		
604149024	L-24	ASTM D2974-87	PMST/1204		
604149025	L-25	ASTM D2974-87	PMST/1204		
604149026	L-26	ASTM D2974-87	PMST/1204		
604149027	L-27	ASTM D2974-87	PMST/1204		
604149028	L-28	ASTM D2974-87	PMST/1204		
604149029	DUP-1	ASTM D2974-87	PMST/1204		
604149030	DUP-2	ASTM D2974-87	PMST/1204		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 3
0990507

Section A

Required Client Information:

Company: Burns + McDonnell
Address: 9400 Ward Parkway
Kansas City MO 64114
Email To: Craig Stevens
Phone: 816-333-9400 Fax: _____
Requested Due Date/TAT: _____

Section B

Required Project Information:

Report To: Craig Stevens
Copy To: _____
Purchase Order No: _____
Project Name: Delphi
Project Number: 39580

Section C

Invoice Information:

Attention: _____
Company Name: _____
Address: _____
Pace Quote Reference: _____
Pace Project Manager: _____
Pace Profile #: _____

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ Other _____

SITE LOCATION

☐ GA ☐ IL ☐ IN ☐ MI ☐ MN ☐ NC
☐ OH ☐ SC ☐ WI ☐ OTHER _____

Filtered (Y/N)

Requested Analysis:

8082 PCB
Residual Chlorine (Y/N)
Pace Project Number
Lab I.D.

Section D Required Client Information

SAMPLE ID

One Character per box.
(A-Z, 0-9 / -)
Samples IDs MUST BE UNIQUE

Valid Matrix Codes
MATRIX
DRINKING WATER
WATER
WASTE WATER
PRODUCT
SOIL/SOLID
OIL
WIPE
AIR
OTHER
TISSUE
CODE
DW
WT
WW
P
SL
OL
WP
AR
OT
TS

MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis: 8062 PCB Residual Chlorine (Y/N) GSAF Pace Project Number Lab I.D.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITION			
<u>[Signature]</u>	<u>1/19/06</u>	<u>1658</u>	<u>[Signature]</u>	<u>1/19/06</u>	<u>1656</u>	<u>33</u>	Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

Justin Carter

SIGNATURE of SAMPLER:

[Signature]

DATE Signed (MM/DD/YY)

1/19/06

Temp in °C

Received on Ice

Custody Sealed Cooler

Samples Intact



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 3
0990508

Section A

Required Client Information:

Company: Burns & McDonnell
Address: 9402 Ward Parkway
Email To: _____
Phone: 816-332-9400 Fax: _____
Requested Due Date/TAT: _____

Section B

Required Project Information:

Report To: Craig Stevens
Copy To: _____
Purchase Order No.: _____
Project Name: Delphi
Project Number: 39580

Section C

Invoice Information:

Attention: _____
Company Name: _____
Address: _____
Pace Quote Reference: _____
Pace Project Manager: _____
Pace Profile #: _____

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ Other _____

SITE LOCATION
☐ GA ☐ IL ☐ IN ☐ MI ☐ MN ☐ NC
☐ OH ☐ SC ☐ WI ☐ OTHER _____

ITEM #	Section D Required Client Information												MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							<div>872 PCB</div> <div>Residual Chlorine (Y/N)</div> <div>Pace Project Number Lab ID</div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	SAMPLE ID One Character per box. (A-Z, 0-9 / -) Samples IDs MUST BE UNIQUE														COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol											Other																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITION			
	1/19/06	1658		1/19/06	1658	33	Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER.

Justin Carter

SIGNATURE OF SAMPLER

DATE (MM/DD/YY)

1/19/06

Temp in °C _____
Received _____
on Ice _____
Custody _____
Sealed Cooler _____
Samples intact _____

SEE REVERSE SIDE FOR INSTRUCTIONS

January 27, 2006

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114


RE: Project: DELPHI 39580
Pace Project No.: 604221

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

angela.brown@pacelabs.com

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

REPORT OF LABORATORY ANALYSIS

Page 1 of 16

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SAMPLE SUMMARY

Project: DELPHI 39580

Pace Project No : 604221

Lab ID	Sample ID	Matrix	Date Collected	Date Received
604221001	SOLIDIFIED OILY SLUDGE	Solid	01/20/06 09 33	01/20/06 13:15
604221002	OILY SLUDGE	Solid	01/20/06 09:43	01/20/06 13:15
604221003	TP3 EAST	Solid	01/20/06 09:57	01/20/06 13:15
604221004	TP3 WEST	Solid	01/20/06 09 54	01/20/06 13:15
604221005	TP4 EAST	Solid	01/20/06 10:06	01/20/06 13:15
604221006	TP4 WEST	Solid	01/20/06 10:10	01/20/06 13:15
604221007	UTP5 NORTH	Solid	01/20/06 10 20	01/20/06 13:15
604221008	UTP5 CENTRAL	Solid	01/20/06 10:18	01/20/06 13:15
604221009	UTP5 SOUTH	Solid	01/20/06 10:15	01/20/06 13:15

REPORT OF LABORATORY ANALYSIS

Page 2 of 16

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SAMPLE ANALYTE COUNT

Project: DELPHI 39580

Pace Project No.: 604221

Lab ID	Sample ID	Method	Analytes Reported
604221001	SOLIDIFIED OILY SLUDGE	EPA 8082	9
604221002	OILY SLUDGE	EPA 8082	9
604221003	TP3 EAST	EPA 8082	9
604221004	TP3 WEST	EPA 8082	9
604221005	TP4 EAST	EPA 8082	9
604221006	TP4 WEST	EPA 8082	9
604221007	UTP5 NORTH	EPA 8082	9
604221008	UTP5 CENTRAL	EPA 8082	9
604221009	UTP5 SOUTH	EPA 8082	9

REPORT OF LABORATORY ANALYSIS

Page 3 of 16

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ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: **SOLIDIFIED OILY SLUDGE** Lab ID: **604221001** Collected: 01/20/06 09:33 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	12674-11-2	1
PCB-1221 (Aroclor 1221)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	12672-29-6	
PCB-1254 (Aroclor 1254)	382	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	11096-82-5	
Tetrachloro-m-xylene (S)	80	%	33-135	10	01/25/06 00:00	01/26/06 13:05	877-09-8	
Decachlorobiphenyl (S)	102	%	28-150	10	01/25/06 00:00	01/26/06 13:05	2051-24-3	

ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: OILY SLUDGE Lab ID: 604221002 Collected: 01/20/06 09:43 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13:23	12674-11-2	1
PCB-1221 (Aroclor 1221)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13:23	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13:23	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13:23	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13:23	12672-29-6	
PCB-1254 (Aroclor 1254)	337	ug/kg	329	10	01/25/06 00:00	01/26/06 13:23	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13:23	11096-82-5	
Tetrachloro-m-xylene (S)	138	%	33-135	10	01/25/06 00:00	01/26/06 13:23	877-09-8	2
Decachlorobiphenyl (S)	98	%	28-150	10	01/25/06 00:00	01/26/06 13:23	2051-24-3	

ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: **TP3 EAST** Lab ID: **604221003** Collected: 01/20/06 09:57 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB		Analytical Method: EPA 8082 Preparation Method: EPA 3550						
PCB-1016 (Aroclor 1016)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	53469-21-9	
PCB-1248 (Aroclor 1248)	53000	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 16:03	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 16:03	2051-24-3	3

ANALYTICAL RESULTS

Project: DELPHI 39580
Pace Project No.: 604221

Sample: TP3 WEST Lab ID: 604221004 Collected: 01/20/06 09:54 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB		Analytical Method: EPA 8082 Preparation Method: EPA 3550						
PCB-1016 (Aroclor 1016)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	53469-21-9	
PCB-1248 (Aroclor 1248)	73400	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 16:55	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 16:55	2051-24-3	3

ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: TP4 EAST

Lab ID: 604221005

Collected: 01/20/06 10:06

Received: 01/20/06 13:15

Matrix Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	53469-21-9	
PCB-1248 (Aroclor 1248)	61100	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 16:20	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 16:20	2051-24-3	3

ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: TP4 WEST

Lab ID: 604221006

Collected: 01/20/06 10:10

Received: 01/20/06 13:15

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	53469-21-9	
PCB-1248 (Aroclor 1248)	79800	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 16:38	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 16:38	2051-24-3	3

ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: UTP5 NORTH Lab ID: 604221007 Collected: 01/20/06 10:20 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND ug/kg		6580	200	01/25/06 00:00	01/26/06 15:41	12674-11-2	
PCB-1221 (Aroclor 1221)	ND ug/kg		6580	200	01/25/06 00:00	01/26/06 15:41	11104-28-2	
PCB-1232 (Aroclor 1232)	ND ug/kg		6580	200	01/25/06 00:00	01/26/06 15:41	11141-16-5	
PCB-1242 (Aroclor 1242)	ND ug/kg		6580	200	01/25/06 00:00	01/26/06 15:41	53469-21-9	
PCB-1248 (Aroclor 1248)	86500 ug/kg		6580	200	01/25/06 00:00	01/26/06 15:41	12672-29-6	
PCB-1254 (Aroclor 1254)	ND ug/kg		6580	200	01/25/06 00:00	01/26/06 15:41	11097-69-1	
PCB-1260 (Aroclor 1260)	ND ug/kg		6580	200	01/25/06 00:00	01/26/06 15:41	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 15:41	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 15:41	2051-24-3	3

ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: UTP5 CENTRAL Lab ID: 604221008 Collected: 01/20/06 10:18 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	53469-21-9	
PCB-1248 (Aroclor 1248)	89700	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 14:49	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 14:49	2051-24-3	3

ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: **UTP5 SOUTH** Lab ID: **604221009** Collected: 01/20/06 10 15 Received: 01/20/06 13 15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	53469-21-9	
PCB-1248 (Aroclor 1248)	17500	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 15:23	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 15:23	2051-24-3	3

ANALYTICAL RESULTS QUALIFIERS

Project: DELPHI 39580

Pace Project No.: 604221

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

- [1] Elevated detection limits due to matrix interference.
- [2] Surrogate recovery exceeded QC limits. No corrective action needed since the alternate surrogate is within limits.
- [3] Surrogate diluted out.

QUALITY CONTROL DATA

Project: DELPHI 39580

Pace Project No.: 604221

QC Batch: OEXT/1929

Analysis Method: EPA 8082

QC Batch Method: EPA 3550

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 604221001, 604221002, 604221003, 604221004, 604221005, 604221006, 604221007, 604221008, 604221009

METHOD BLANK: 34477

Associated Lab Samples: 604221001, 604221002, 604221003, 604221004, 604221005, 604221006, 604221007, 604221008, 604221009

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	80	33-135	
Decachlorobiphenyl (S)	%	88	28-150	

LABORATORY CONTROL SAMPLE: 34478

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	141	85	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	160	96	55-120	
Tetrachloro-m-xylene (S)	%			83	33-135	
Decachlorobiphenyl (S)	%			91	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 34479

34480

Parameter	Units	604221004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	167	167	6250	6780	3750	4074	46-120	8	17 1
PCB-1260 (Aroclor 1260)	ug/kg	ND	167	167	1890	2450	1134	1471	33-136	26	21 1
Tetrachloro-m-xylene (S)	%						79	81	33-135		
Decachlorobiphenyl (S)	%						79	79	28-150		

QUALITY CONTROL DATA QUALIFIERS

Project: DELPHI 39580

Pace Project No.: 604221

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit

S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

[1] The matrix spike recovery was outside QC limits. Batch acceptance based on LCS recovery.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: DELPHI 39580

Pace Project No.: 604221

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
604221001	SOLIDIFIED OILY SLUDGE	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221002	OILY SLUDGE	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221003	TP3 EAST	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221004	TP3 WEST	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221005	TP4 EAST	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221006	TP4 WEST	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221007	UTP5 NORTH	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221008	UTP5 CENTRAL	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221009	UTP5 SOUTH	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440

Request for Chemical Analysis and Chain of Custody Record



Pace Analytical Services, Inc.

9608 Loiret Blvd
Lenexa, KS 66219

Phone (913)599-5665
Fax (913)599-1759

January 27, 2006

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114

RE: Project: DELPHI 39580
Pace Project No.: 604221

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2006. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angie Brown

angela.brown@pacelabs.com

Arkansas Certification Number. 05-008-0
California Certification Number. 02109CA
Illinois Certification Number. 001191
Iowa Certification Number. 118
Kansas/NELAP Certification Number. E-10116
Louisiana Certification Number. 03055
Minnesota Certification Number. 020-999-394
Oklahoma Certification Number. 9205/9935
Utah Certification Number. 9135995665

Enclosures

REPORT OF LABORATORY ANALYSIS

Page 1 of 16

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SAMPLE SUMMARY

Project. DELPHI 39580

Pace Project No.: 604221

Lab ID	Sample ID	Matrix	Date Collected	Date Received
604221001	SOLIDIFIED OILY SLUDGE	Solid	01/20/06 09:33	01/20/06 13:15
604221002	OILY SLUDGE	Solid	01/20/06 09:43	01/20/06 13:15
604221003	TP3 EAST	Solid	01/20/06 09:57	01/20/06 13:15
604221004	TP3 WEST	Solid	01/20/06 09:54	01/20/06 13:15
604221005	TP4 EAST	Solid	01/20/06 10:06	01/20/06 13:15
604221006	TP4 WEST	Solid	01/20/06 10:10	01/20/06 13:15
604221007	UTP5 NORTH	Solid	01/20/06 10:20	01/20/06 13:15
604221008	UTP5 CENTRAL	Solid	01/20/06 10:18	01/20/06 13:15
604221009	UTP5 SOUTH	Solid	01/20/06 10:15	01/20/06 13:15

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SAMPLE ANALYTE COUNT

Project. DELPHI 39580

Pace Project No. 604221

Lab ID	Sample ID	Method	Analytes Reported
604221001	SOLIDIFIED OILY SLUDGE	EPA 8082	9
604221002	OILY SLUDGE	EPA 8082	9
604221003	TP3 EAST	EPA 8082	9
604221004	TP3 WEST	EPA 8082	9
604221005	TP4 EAST	EPA 8082	9
604221006	TP4 WEST	EPA 8082	9
604221007	UTP5 NORTH	EPA 8082	9
604221008	UTP5 CENTRAL	EPA 8082	9
604221009	UTP5 SOUTH	EPA 8082	9

REPORT OF LABORATORY ANALYSIS

Page 3 of 16

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ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No: 604221

Sample: SOLIDIFIED OILY SLUDGE Lab ID: 604221001 Collected: 01/20/06 09:33 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	12674-11-2	1
PCB-1221 (Aroclor 1221)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	12672-29-6	
PCB-1254 (Aroclor 1254)	382	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	330	10	01/25/06 00:00	01/26/06 13:05	11096-82-5	
Tetrachloro-m-xylene (S)	80	%	33-135	10	01/25/06 00:00	01/26/06 13:05	877-09-8	
Decachlorobiphenyl (S)	102	%	28-150	10	01/25/06 00:00	01/26/06 13:05	2051-24-3	

Date: 01/27/2006 01:25 PM

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No. 604221

Sample: OILY SLUDGE Lab ID: 604221002 Collected: 01/20/06 09 43 Received: 01/20/06 13.15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13 23	12674-11-2	1
PCB-1221 (Aroclor 1221)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13 23	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13 23	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13.23	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13 23	12672-29-6	
PCB-1254 (Aroclor 1254)	337	ug/kg	329	10	01/25/06 00 00	01/26/06 13 23	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	329	10	01/25/06 00:00	01/26/06 13:23	11096-82-5	
Tetrachloro-m-xylene (S)	138 %		33-135	10	01/25/06 00 00	01/26/06 13:23	877-09-8	2
Decachlorobiphenyl (S)	98 %		28-150	10	01/25/06 00 00	01/26/06 13:23	2051-24-3	

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ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No : 604221

Sample: TP3 EAST Lab ID: 604221003 Collected: 01/20/06 09:57 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	53469-21-9	
PCB-1248 (Aroclor 1248)	53000	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:03	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 16:03	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 16:03	2051-24-3	3

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Page 6 of 16

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ANALYTICAL RESULTS

Project: DELPHI 39580
Pace Project No.: 604221

Sample: TP3 WEST Lab ID: 604221004 Collected: 01/20/06 09.54 Received: 01/20/06 13.15 Matrix Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB		Analytical Method EPA 8082 Preparation Method EPA 3550						
PCB-1016 (Aroclor 1016)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	53469-21-9	
PCB-1248 (Aroclor 1248)	73400	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 16:55	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	200	01/25/06 00:00	01/26/06 16:55	877-09-8	3
Decachlorobiphenyl (S)	0	%	28-150	200	01/25/06 00:00	01/26/06 16:55	2051-24-3	3

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Page 7 of 16

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ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No: 604221

Sample: TP4 EAST Lab ID: 604221005 Collected: 01/20/06 10 06 Received: 01/20/06 13 15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	53469-21-9	
PCB-1248 (Aroclor 1248)	61100	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 16:20	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 16:20	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 16:20	2051-24-3	3

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ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No: 604221

Sample: TP4 WEST Lab ID: 604221006 Collected: 01/20/06 10.10 Received: 01/20/06 13 15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB		Analytical Method: EPA 8082 Preparation Method: EPA 3550						
PCB-1016 (Aroclor 1016)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	53469-21-9	
PCB-1248 (Aroclor 1248)	79800	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 16:38	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 16:38	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 16:38	2051-24-3	3





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ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: UTP5 NORTH Lab ID: 604221007 Collected: 01/20/06 10:20 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 15:41	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 15:41	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 15:41	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 15:41	53469-21-9	
PCB-1248 (Aroclor 1248)	86500	ug/kg	6580	200	01/25/06 00:00	01/26/06 15:41	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 15:41	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6580	200	01/25/06 00:00	01/26/06 15:41	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 15:41	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 15:41	2051-24-3	3





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ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No : 604221

Sample: UTP5 CENTRAL Lab ID: 604221008 Collected: 01/20/06 10:18 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB		Analytical Method: EPA 8082 Preparation Method: EPA 3550						
PCB-1016 (Aroclor 1016)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	53469-21-9	
PCB-1248 (Aroclor 1248)	89700	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6590	200	01/25/06 00:00	01/26/06 14:49	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	200	01/25/06 00:00	01/26/06 14:49	877-09-8	3
Decachlorobiphenyl (S)	0	%	28-150	200	01/25/06 00:00	01/26/06 14:49	2051-24-3	3





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ANALYTICAL RESULTS

Project: DELPHI 39580

Pace Project No.: 604221

Sample: UTP5 SOUTH Lab ID: 604221009 Collected: 01/20/06 10:15 Received: 01/20/06 13:15 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	53469-21-9	
PCB-1248 (Aroclor 1248)	17500	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	6600	200	01/25/06 00:00	01/26/06 15:23	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/25/06 00:00	01/26/06 15:23	877-09-8	3
Decachlorobiphenyl (S)	0 %		28-150	200	01/25/06 00:00	01/26/06 15:23	2051-24-3	3

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ANALYTICAL RESULTS QUALIFIERS

Project: DELPHI 39580

Pace Project No.: 604221

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

[1] Elevated detection limits due to matrix interference

[2] Surrogate recovery exceeded QC limits. No corrective action needed since the alternate surrogate is within limits.

[3] Surrogate diluted out





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QUALITY CONTROL DATA

Project: DELPHI 39580

Pace Project No: 604221

QC Batch: OEXT/1929

Analysis Method: EPA 8082

QC Batch Method: EPA 3550

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 604221001, 604221002, 604221003, 604221004, 604221005, 604221006, 604221007, 604221008, 604221009

METHOD BLANK: 34477

Associated Lab Samples: 604221001, 604221002, 604221003, 604221004, 604221005, 604221006, 604221007, 604221008, 604221009

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	80	33-135	
Decachlorobiphenyl (S)	%	88	28-150	

LABORATORY CONTROL SAMPLE: 34478

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	141	85	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	160	96	55-120	
Tetrachloro-m-xylene (S)	%			83	33-135	
Decachlorobiphenyl (S)	%			91	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 34479

34480

Parameter	Units	604221004 Result	MS Spike Conc	MSD Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	167	167	6250	6780	3750	4074	46-120	8	17 1
PCB-1260 (Aroclor 1260)	ug/kg	ND	167	167	1890	2450	1134	1471	33-136	26	21 1
Tetrachloro-m-xylene (S)	%						79	81	33-135		
Decachlorobiphenyl (S)	%						79	79	28-150		

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QUALITY CONTROL DATA QUALIFIERS

Project: DELPHI 39580
Pace Project No: 604221

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

[1] The matrix spike recovery was outside QC limits. Batch acceptance based on LCS recovery.





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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: DELPHI 39580

Pace Project No.: 604221

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
604221001	SOLIDIFIED OILY SLUDGE	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221002	OILY SLUDGE	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221003	TP3 EAST	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221004	TP3 WEST	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221005	TP4 EAST	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221006	TP4 WEST	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221007	UTP5 NORTH	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221008	UTP5 CENTRAL	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440
604221009	UTP5 SOUTH	EPA 3550	OEXT/1929	EPA 8082	GCSV/1440





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January 20, 2006

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114

RE: Project: DELPHI-OLATHE, KS
Pace Project No.: 603811

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on January 11, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angie Brown

angela.brown@pacelabs.com

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

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Page 1 of 29

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SAMPLE SUMMARY

Project. DELPHI-OLATHE, KS

Pace Project No. 603811

Lab ID	Sample ID	Matrix	Date Collected	Date Received
603811001	TP-01	Solid	01/11/06 08:30	01/11/06 12:16
603811002	TP-02	Solid	01/11/06 08:45	01/11/06 12:16
603811003	TP-03	Solid	01/11/06 09:00	01/11/06 12:16
603811004	TP-04	Solid	01/11/06 09:15	01/11/06 12:16
603811005	TP-05	Solid	01/11/06 09:25	01/11/06 12:16
603811006	TP-06	Solid	01/11/06 09:30	01/11/06 12:16
603811007	TP-07	Solid	01/11/06 09:40	01/11/06 12:16
603811008	Z2P-01	Solid	01/11/06 09:55	01/11/06 12:16
603811009	Z2P-02	Solid	01/11/06 10:00	01/11/06 12:16
603811010	Z2P-03	Solid	01/11/06 10:05	01/11/06 12:16
603811011	Z2P-04	Solid	01/11/06 10:10	01/11/06 12:16
603811012	Z2P-05	Solid	01/11/06 10:15	01/11/06 12:16
603811013	Z3P-01	Solid	01/11/06 10:40	01/11/06 12:16
603811014	Z3P-02	Solid	01/11/06 10:45	01/11/06 12:16
603811015	Z3P-03	Solid	01/11/06 10:50	01/11/06 12:16
603811016	Z3P-04	Solid	01/11/06 10:55	01/11/06 12:16
603811017	Z3P-05	Solid	01/11/06 11:00	01/11/06 12:16
603811018	Z3P-06	Solid	01/11/06 11:05	01/11/06 12:16
603811019	Z3P-07	Solid	01/11/06 11:10	01/11/06 12:16

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SAMPLE ANALYTE COUNT

Project: DELPHI-OLATHE, KS
Pace Project No. 603811

Lab ID	Sample ID	Method	Analytes Reported
603811001	TP-01	ASTM D2974-87	1
		EPA 8082	9
603811002	TP-02	ASTM D2974-87	1
		EPA 8082	9
603811003	TP-03	ASTM D2974-87	1
		EPA 8082	9
603811004	TP-04	ASTM D2974-87	1
		EPA 8082	9
603811005	TP-05	ASTM D2974-87	1
		EPA 8082	9
603811006	TP-06	ASTM D2974-87	1
		EPA 8082	9
603811007	TP-07	ASTM D2974-87	1
		EPA 8082	9
603811008	Z2P-01	ASTM D2974-87	1
		EPA 6010	1
		EPA 8082	9
603811009	Z2P-02	ASTM D2974-87	1
		EPA 8082	9
603811010	Z2P-03	ASTM D2974-87	1
		EPA 8082	9
603811011	Z2P-04	ASTM D2974-87	1
		EPA 8082	9
603811012	Z2P-05	ASTM D2974-87	1
		EPA 8082	9
603811013	Z3P-01	ASTM D2974-87	1
		EPA 6010	1
		EPA 8082	9
603811014	Z3P-02	ASTM D2974-87	1
		EPA 8082	9
603811015	Z3P-03	ASTM D2974-87	1
		EPA 8082	9
603811016	Z3P-04	ASTM D2974-87	1
		EPA 8082	9
603811017	Z3P-05	ASTM D2974-87	1
		EPA 8082	9
603811018	Z3P-06	ASTM D2974-87	1

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Z3P-



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SAMPLE ANALYTE COUNT

Project: DELPHI-OLATHE, KS

Pace Project No: 603811

Lab ID	Sample ID	Method	Analytes Reported
603811018	Z3P-06	EPA 8082	9
603811019	Z3P-07	ASTM D2974-87	1
		EPA 8082	9

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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603811

Sample: TP-01 Lab ID: 603811001 Collected 01/11/06 08:30 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	9290	200	01/11/06 00:00	01/12/06 15:21	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	9290	200	01/11/06 00:00	01/12/06 15:21	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	9290	200	01/11/06 00:00	01/12/06 15:21	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	9290	200	01/11/06 00:00	01/12/06 15:21	53469-21-9	
PCB-1248 (Aroclor 1248)	53200	ug/kg	9290	200	01/11/06 00:00	01/12/06 15:21	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	9290	200	01/11/06 00:00	01/12/06 15:21	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	9290	200	01/11/06 00:00	01/12/06 15:21	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	200	01/11/06 00:00	01/12/06 15:21	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	200	01/11/06 00:00	01/12/06 15:21	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	29.0 %	0.10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No 603811

Sample: TP-02 Lab ID: 603811002 Collected: 01/11/06 08:45 Received: 01/11/06 12:16 Matrix Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	9810	200	01/11/06 00 00	01/12/06 15:38	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	9810	200	01/11/06 00 00	01/12/06 15 38	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	9810	200	01/11/06 00:00	01/12/06 15:38	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	9810	200	01/11/06 00:00	01/12/06 15:38	53469-21-9	
PCB-1248 (Aroclor 1248)	114000	ug/kg	9810	200	01/11/06 00:00	01/12/06 15 38	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	9810	200	01/11/06 00 00	01/12/06 15 38	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	9810	200	01/11/06 00:00	01/12/06 15 38	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/11/06 00:00	01/12/06 15.38	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	200	01/11/06 00 00	01/12/06 15:38	2051-24-3	2
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	32.9 %		0.10	1		01/11/06 00 00		

Date: 01/20/2006 12:11 PM

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Page 6 of 29

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ANALYTICAL RESULTS

Project. DELPHI-OLATHE, KS

Pace Project No.: 603811

Sample: TP-03 Lab ID: 603811003 Collected 01/11/06 09:00 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method EPA 8082 Preparation Method. EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	9900	200	01/11/06 00:00	01/12/06 15:55	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	9900	200	01/11/06 00:00	01/12/06 15:55	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	9900	200	01/11/06 00:00	01/12/06 15:55	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	9900	200	01/11/06 00:00	01/12/06 15:55	53469-21-9	
PCB-1248 (Aroclor 1248)	46600	ug/kg	9900	200	01/11/06 00:00	01/12/06 15:55	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	9900	200	01/11/06 00:00	01/12/06 15:55	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	9900	200	01/11/06 00:00	01/12/06 15:55	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	200	01/11/06 00:00	01/12/06 15:55	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	200	01/11/06 00:00	01/12/06 15:55	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	33.5 %	0.10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No. 603811

Sample: TP-04 Lab ID: 603811004 Collected: 01/11/06 09:15 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	8920	200	01/11/06 00:00	01/12/06 16:13	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	8920	200	01/11/06 00:00	01/12/06 16:13	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	8920	200	01/11/06 00:00	01/12/06 16:13	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	8920	200	01/11/06 00:00	01/12/06 16:13	53469-21-9	
PCB-1248 (Aroclor 1248)	74300	ug/kg	8920	200	01/11/06 00:00	01/12/06 16:13	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	8920	200	01/11/06 00:00	01/12/06 16:13	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	8920	200	01/11/06 00:00	01/12/06 16:13	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	200	01/11/06 00:00	01/12/06 16:13	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	200	01/11/06 00:00	01/12/06 16:13	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	26.1 %	0.10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603811

Sample: TP-05 Lab ID: 603811005 Collected 01/11/06 09:25 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	9910	200	01/11/06 00:00	01/12/06 16:30	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	9910	200	01/11/06 00:00	01/12/06 16:30	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	9910	200	01/11/06 00:00	01/12/06 16:30	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	9910	200	01/11/06 00:00	01/12/06 16:30	53469-21-9	
PCB-1248 (Aroclor 1248)	65200	ug/kg	9910	200	01/11/06 00:00	01/12/06 16:30	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	9910	200	01/11/06 00:00	01/12/06 16:30	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	9910	200	01/11/06 00:00	01/12/06 16:30	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/11/06 00:00	01/12/06 16:30	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	200	01/11/06 00:00	01/12/06 16:30	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	33.6 %	0.10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603811

Sample: TP-06 Lab ID: 603811006 Collected: 01/11/06 09 30 Received: 01/11/06 12 16 Matrix Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	10300	200	01/11/06 00 00	01/12/06 16 48	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	10300	200	01/11/06 00.00	01/12/06 16:48	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	10300	200	01/11/06 00 00	01/12/06 16.48	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	10300	200	01/11/06 00:00	01/12/06 16:48	53469-21-9	
PCB-1248 (Aroclor 1248)	83400	ug/kg	10300	200	01/11/06 00:00	01/12/06 16 48	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	10300	200	01/11/06 00.00	01/12/06 16 48	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	10300	200	01/11/06 00:00	01/12/06 16 48	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/11/06 00 00	01/12/06 16 48	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	200	01/11/06 00 00	01/12/06 16.48	2051-24-3	2
Percent Moisture Analytical Method ASTM D2974-87								
Percent Moisture	35.9 %		0.10	1		01/11/06 00:00		

Date, 01/20/2006 12 11 PM

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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No : 603811

Sample: TP-07 Lab ID: 603811007 Collected: 01/11/06 09:40 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	9840	200	01/11/06 00 00	01/12/06 17:05	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	9840	200	01/11/06 00 00	01/12/06 17:05	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	9840	200	01/11/06 00:00	01/12/06 17:05	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	9840	200	01/11/06 00:00	01/12/06 17:05	53469-21-9	
PCB-1248 (Aroclor 1248)	107000	ug/kg	9840	200	01/11/06 00:00	01/12/06 17:05	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	9840	200	01/11/06 00 00	01/12/06 17:05	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	9840	200	01/11/06 00:00	01/12/06 17:05	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	200	01/11/06 00:00	01/12/06 17:05	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	200	01/11/06 00:00	01/12/06 17:05	2051-24-3	2

Percent Moisture Analytical Method: ASTM D2974-87

Percent Moisture	33.1 %	0.10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No: 603811

Sample: Z2P-01 Lab ID: 603811008 Collected: 01/11/06 09:55 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	9020	200	01/11/06 00:00	01/12/06 17:22	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	9020	200	01/11/06 00:00	01/12/06 17:22	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	9020	200	01/11/06 00:00	01/12/06 17:22	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	9020	200	01/11/06 00:00	01/12/06 17:22	53469-21-9	
PCB-1248 (Aroclor 1248)	72200	ug/kg	9020	200	01/11/06 00:00	01/12/06 17:22	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	9020	200	01/11/06 00:00	01/12/06 17:22	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	9020	200	01/11/06 00:00	01/12/06 17:22	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	200	01/11/06 00:00	01/12/06 17:22	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	200	01/11/06 00:00	01/12/06 17:22	2051-24-3	2
6010 MET ICP, TCLP								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	31.5	mg/L	0.50	1	01/19/06 00:00	01/19/06 17:27	7439-92-1	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	26.9	%	0.10	1		01/11/06 00:00		

Date: 01/20/2006 12:11 PM

REPORT OF LABORATORY ANALYSIS

Page 12 of 29

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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.. 603811

Sample: Z2P-02 Lab ID: 603811009 Collected: 01/11/06 10:00 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	5330	100	01/11/06 00:00	01/12/06 17:40	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	5330	100	01/11/06 00:00	01/12/06 17:40	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	5330	100	01/11/06 00:00	01/12/06 17:40	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	5330	100	01/11/06 00:00	01/12/06 17:40	53469-21-9	
PCB-1248 (Aroclor 1248)	17900	ug/kg	5330	100	01/11/06 00:00	01/12/06 17:40	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	5330	100	01/11/06 00:00	01/12/06 17:40	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	5330	100	01/11/06 00:00	01/12/06 17:40	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/11/06 00:00	01/12/06 17:40	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	100	01/11/06 00:00	01/12/06 17:40	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	38.2 %	0.10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603811

Sample: Z2P-03 Lab ID: 603811010 Collected: 01/11/06 10:05 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	1550	10	01/11/06 00:00	01/12/06 15:24	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	1550	10	01/11/06 00:00	01/12/06 15:24	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	1550	10	01/11/06 00:00	01/12/06 15:24	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	1550	10	01/11/06 00:00	01/12/06 15:24	53469-21-9	
PCB-1248 (Aroclor 1248)	5130	ug/kg	1550	10	01/11/06 00:00	01/12/06 15:24	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	1550	10	01/11/06 00:00	01/12/06 15:24	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	1550	10	01/11/06 00:00	01/12/06 15:24	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	10	01/11/06 00:00	01/12/06 15:24	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	10	01/11/06 00:00	01/12/06 15:24	2051-24-3	2

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	78.7 %	0.10	1	01/11/06 00:00
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603811

Sample: Z2P-04 Lab ID: 603811011 Collected: 01/11/06 10:10 Received 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method EPA 8082 Preparation Method EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	54.8	1	01/11/06 00:00	01/12/06 12:15	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	54.8	1	01/11/06 00:00	01/12/06 12:15	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	54.8	1	01/11/06 00:00	01/12/06 12:15	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	54.8	1	01/11/06 00:00	01/12/06 12:15	53469-21-9	
PCB-1248 (Aroclor 1248)	599	ug/kg	54.8	1	01/11/06 00:00	01/12/06 12:15	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	54.8	1	01/11/06 00:00	01/12/06 12:15	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	54.8	1	01/11/06 00:00	01/12/06 12:15	11096-82-5	
Tetrachloro-m-xylene (S)	81	%	33-135	1	01/11/06 00:00	01/12/06 12:15	877-09-8	
Decachlorobiphenyl (S)	84	%	28-150	1	01/11/06 00:00	01/12/06 12:15	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	39.8 %	0.10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project DELPHI-OLATHE, KS
Pace Project No : 603811

Sample: Z2P-05 Lab ID: 603811012 Collected: 01/11/06 10 15 Received: 01/11/06 12 16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method EPA 8082 Preparation Method EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	46.4	1	01/11/06 00 00	01/12/06 12 36	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	46.4	1	01/11/06 00:00	01/12/06 12 36	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	46.4	1	01/11/06 00:00	01/12/06 12:36	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	46.4	1	01/11/06 00 00	01/12/06 12:36	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	46.4	1	01/11/06 00:00	01/12/06 12:36	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	46.4	1	01/11/06 00 00	01/12/06 12 36	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	46.4	1	01/11/06 00:00	01/12/06 12:36	11096-82-5	
Tetrachloro-m-xylene (S)	82 %		33-135	1	01/11/06 00:00	01/12/06 12:36	877-09-8	
Decachlorobiphenyl (S)	88 %		28-150	1	01/11/06 00:00	01/12/06 12 36	2051-24-3	
Percent Moisture Analytical Method ASTM D2974-87								
Percent Moisture	29.0 %		0.10	1		01/11/06 00 00		





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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.. 603811

Sample: Z3P-01 Lab ID: 603811013 Collected: 01/11/06 10:40 Received 01/11/06 12 16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	21200	500	01/11/06 00:00	01/12/06 16:06	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	21200	500	01/11/06 00:00	01/12/06 16:06	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	21200	500	01/11/06 00:00	01/12/06 16:06	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	21200	500	01/11/06 00:00	01/12/06 16:06	53469-21-9	
PCB-1248 (Aroclor 1248)	168000	ug/kg	21200	500	01/11/06 00:00	01/12/06 16:06	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	21200	500	01/11/06 00:00	01/12/06 16:06	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	21200	500	01/11/06 00:00	01/12/06 16:06	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	500	01/11/06 00:00	01/12/06 16:06	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	500	01/11/06 00:00	01/12/06 16:06	2051-24-3	2
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	121	mg/L	0.50	1	01/19/06 00:00	01/19/06 16:52	7439-92-1	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	22.5	%	0.10	1		01/11/06 00:00		





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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No : 603811

Sample: Z3P-02 Lab ID: 603811014 Collected: 01/11/06 10:45 Received: 01/11/06 12:16 Matrix Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method EPA 8082			Preparation Method EPA 3550					
PCB-1016 (Aroclor 1016)	ND	ug/kg	47.9	1	01/11/06 00:00	01/12/06 13:18	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	47.9	1	01/11/06 00:00	01/12/06 13:18	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	47.9	1	01/11/06 00:00	01/12/06 13:18	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	47.9	1	01/11/06 00:00	01/12/06 13:18	53469-21-9	
PCB-1248 (Aroclor 1248)	157	ug/kg	47.9	1	01/11/06 00:00	01/12/06 13:18	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	47.9	1	01/11/06 00:00	01/12/06 13:18	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	47.9	1	01/11/06 00:00	01/12/06 13:18	11096-82-5	
Tetrachloro-m-xylene (S)	77	%	33-135	1	01/11/06 00:00	01/12/06 13:18	877-09-8	
Decachlorobiphenyl (S)	77	%	28-150	1	01/11/06 00:00	01/12/06 13:18	2051-24-3	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	31.3	%	0.10	1	01/11/06 00:00			





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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No. 603811

Sample: Z3P-03 Lab ID: 603811015 Collected: 01/11/06 10:50 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	267	5	01/11/06 00:00	01/12/06 15:45	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	267	5	01/11/06 00:00	01/12/06 15:45	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	267	5	01/11/06 00:00	01/12/06 15:45	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	267	5	01/11/06 00:00	01/12/06 15:45	53469-21-9	
PCB-1248 (Aroclor 1248)	1080	ug/kg	267	5	01/11/06 00:00	01/12/06 15:45	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	267	5	01/11/06 00:00	01/12/06 15:45	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	267	5	01/11/06 00:00	01/12/06 15:45	11096-82-5	
Tetrachloro-m-xylene (S)	90	%	33-135	5	01/11/06 00:00	01/12/06 15:45	877-09-8	
Decachlorobiphenyl (S)	79	%	28-150	5	01/11/06 00:00	01/12/06 15:45	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	38.4 %	0	10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603811

Sample: Z3P-04 Lab ID: 603811016 Collected 01/11/06 10:55 Received 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB		Analytical Method: EPA 8082 Preparation Method: EPA 3550						
PCB-1016 (Aroclor 1016)	ND	ug/kg	555	10	01/11/06 00:00	01/12/06 16:27	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	555	10	01/11/06 00:00	01/12/06 16:27	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	555	10	01/11/06 00:00	01/12/06 16:27	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	555	10	01/11/06 00:00	01/12/06 16:27	53469-21-9	
PCB-1248 (Aroclor 1248)	2800	ug/kg	555	10	01/11/06 00:00	01/12/06 16:27	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND	ug/kg	555	10	01/11/06 00:00	01/12/06 16:27	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	555	10	01/11/06 00:00	01/12/06 16:27	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	10	01/11/06 00:00	01/12/06 16:27	877-09-8	2
Decachlorobiphenyl (S)	0	%	28-150	10	01/11/06 00:00	01/12/06 16:27	2051-24-3	2
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	40.7	%	0	10	1	01/11/06 00:00		





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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603811

Sample: Z3P-05 Lab ID: 603811017 Collected: 01/11/06 11:00 Received: 01/11/06 12:16 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND ug/kg		61.7	1	01/11/06 00 00	01/12/06 14:21	12674-11-2	
PCB-1221 (Aroclor 1221)	ND ug/kg		61.7	1	01/11/06 00 00	01/12/06 14:21	11104-28-2	
PCB-1232 (Aroclor 1232)	ND ug/kg		61.7	1	01/11/06 00:00	01/12/06 14:21	11141-16-5	
PCB-1242 (Aroclor 1242)	ND ug/kg		61.7	1	01/11/06 00:00	01/12/06 14:21	53469-21-9	
PCB-1248 (Aroclor 1248)	410 ug/kg		61.7	1	01/11/06 00:00	01/12/06 14:21	12672-29-6	1
PCB-1254 (Aroclor 1254)	ND ug/kg		61.7	1	01/11/06 00:00	01/12/06 14:21	11097-69-1	
PCB-1260 (Aroclor 1260)	ND ug/kg		61.7	1	01/11/06 00:00	01/12/06 14:21	11096-82-5	
Tetrachloro-m-xylene (S)	70 %		33-135	1	01/11/06 00:00	01/12/06 14:21	877-09-8	
Decachlorobiphenyl (S)	77 %		28-150	1	01/11/06 00:00	01/12/06 14:21	2051-24-3	

Percent Moisture Analytical Method: ASTM D2974-87

Percent Moisture	46.6 %	0 10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project DELPHI-OLATHE, KS
Pace Project No.: 603811

Sample: Z3P-06 Lab ID: 603811018 Collected: 01/11/06 11 05 Received 01/11/06 12 16 Matrix Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	2330	50	01/11/06 00:00	01/12/06 16 48	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	2330	50	01/11/06 00 00	01/12/06 16 48	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	2330	50	01/11/06 00 00	01/12/06 16 48	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	2330	50	01/11/06 00 00	01/12/06 16:48	53469-21-9	
PCB-1248 (Aroclor 1248)	13200	ug/kg	2330	50	01/11/06 00 00	01/12/06 16:48	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	2330	50	01/11/06 00:00	01/12/06 16:48	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	2330	50	01/11/06 00:00	01/12/06 16 48	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	50	01/11/06 00:00	01/12/06 16:48	877-09-8	2
Decachlorobiphenyl (S)	0 %		28-150	50	01/11/06 00.00	01/12/06 16:48	2051-24-3	2

Percent Moisture Analytical Method ASTM D2974-87

Percent Moisture	29.2 %	0.10	1	01/11/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No: 603811

Sample: Z3P-07 Lab ID: 603811019 Collected 01/11/06 11:10 Received: 01/11/06 12:16 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	43.5	1	01/11/06 00:00	01/12/06 15:03	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	43.5	1	01/11/06 00:00	01/12/06 15:03	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	43.5	1	01/11/06 00:00	01/12/06 15:03	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	43.5	1	01/11/06 00:00	01/12/06 15:03	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	43.5	1	01/11/06 00:00	01/12/06 15:03	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	43.5	1	01/11/06 00:00	01/12/06 15:03	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	43.5	1	01/11/06 00:00	01/12/06 15:03	11096-82-5	
Tetrachloro-m-xylene (S)	81	%	33-135	1	01/11/06 00:00	01/12/06 15:03	877-09-8	
Decachlorobiphenyl (S)	79	%	28-150	1	01/11/06 00:00	01/12/06 15:03	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	24.3 %	0.10	1	01/11/06 00:00
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Date: 01/20/2006 12:11 PM

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ANALYTICAL RESULTS QUALIFIERS

Project: DELPHI-OLATHE, KS
Pace Project No.. 603811

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit

S - Surrogate

ANALYTE QUALIFIERS

- [1] Method Blank had Aroclor 1242 contamination above the reporting limit. Samples contain Aroclor 1248, therefore, associated samples should not have a bias due to the amount found in the blank.
- [2] Surrogate diluted out.





Pace Analytical Services, Inc.

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Lenexa, KS 66219

Phone: (913)599-5665
Fax: (913)599-1759

QUALITY CONTROL DATA

Project: DELPHI-OLATHE, KS
Pace Project No.: 603811

QC Batch: OEXT/1829 Analysis Method: EPA 8082
QC Batch Method: EPA 3550 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 603811001, 603811002, 603811003, 603811004, 603811005, 603811006, 603811007, 603811008, 603811009, 603811010, 603811011, 603811012, 603811013, 603811014, 603811015, 603811016, 603811017, 603811018, 603811019

METHOD BLANK: 30556

Associated Lab Samples: 603811001, 603811002, 603811003, 603811004, 603811005, 603811006, 603811007, 603811008, 603811009, 603811010, 603811011, 603811012, 603811013, 603811014, 603811015, 603811016, 603811017, 603811018, 603811019

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	80.0	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	72	33-135	
Decachlorobiphenyl (S)	%	84	28-150	

LABORATORY CONTROL SAMPLE: 30557

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	151	91	59-115.1	
PCB-1260 (Aroclor 1260)	ug/kg	167	171	103	55-120	
Tetrachloro-m-xylene (S)	%			91	33-135	
Decachlorobiphenyl (S)	%			94	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
-----------	-------	--------	----------------	-----------------	-----------	------------	----------	-----------	--------------	---------	------





Pace Analytical Services, Inc.

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QUALITY CONTROL DATA

Project. DELPHI-OLATHE, KS

Pace Project No. 603811

QC Batch. PMST/1186 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples. 603811001, 603811002, 603811003, 603811004, 603811005, 603811006, 603811007, 603811008, 603811009, 603811010, 603811011, 603811012, 603811013, 603811014, 603811015, 603811016, 603811017, 603811018, 603811019

METHOD BLANK: 30629

Associated Lab Samples: 603811001, 603811002, 603811003, 603811004, 603811005, 603811006, 603811007, 603811008, 603811009, 603811010, 603811011, 603811012, 603811013, 603811014, 603811015, 603811016, 603811017, 603811018, 603811019

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 30630

Parameter	Units	603811001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.0	24.8	16	20	



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QUALITY CONTROL DATA

Project: DELPHI-OLATHE, KS
Pace Project No.: 603811

QC Batch: MPRP/1467 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 603811008, 603811013

METHOD BLANK: 32500

Associated Lab Samples: 603811008, 603811013

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Silver	mg/L	ND	0.10	
Arsenic	mg/L	ND	0.50	
Barium	mg/L	ND	0.20	
Cadmium	mg/L	ND	0.050	
Chromium	mg/L	ND	0.10	
Lead	mg/L	ND	0.50	
Selenium	mg/L	ND	0.50	

LABORATORY CONTROL SAMPLE: 32501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Silver	mg/L	5	5.0	100	80-120	
Arsenic	mg/L	10	9.9	99	80-120	
Barium	mg/L	10	10.3	103	80-120	
Cadmium	mg/L	10	10.3	103	80-120	
Chromium	mg/L	10	10.2	102	80-120	
Lead	mg/L	10	10.4	104	80-120	
Selenium	mg/L	10	10.2	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 32502

32503

603811008												
Parameter	Units	603811008		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Silver	mg/L	ND	5	5	5.0	5.1	100	101	75-125	1	20	
Arsenic	mg/L	ND	10	10	10.0	10.1	101	101	75-125	1	20	
Barium	mg/L	0.29	10	10	10.4	10.5	102	102	75-125	1	20	
Cadmium	mg/L	ND	10	10	10.5	10.7	105	106	75-125	1	20	
Chromium	mg/L	ND	10	10	10.2	10.3	102	102	75-125	1	20	
Lead	mg/L	31.5	10	10	42.4	42.6	109	110	75-125	0	20	
Selenium	mg/L	ND	10	10	10.3	10.3	103	103	75-125	0	20	

Date: 01/20/2006 12:11 PM

REPORT OF LABORATORY ANALYSIS

Page 27 of 29

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QUALITY CONTROL DATA QUALIFIERS

Project: DELPHI-OLATHE, KS

Pace Project No 603811

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit

S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

- [1] The Matrix Spike and Matrix Spike Duplicate (MS/MSD) compound recovery information is not available. The randomly selected sample used for spiking purposes required a dilution due to high level of target analyte(s). The Laboratory Control Spike (LCS) demonstrates satisfactory recovery of target analytes during extraction workup of the QA/QC sample group.





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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: DELPHI-OLATHE, KS
Pace Project No.: 603811

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
603811001	TP-01	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811002	TP-02	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811003	TP-03	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811004	TP-04	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811005	TP-05	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811006	TP-06	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811007	TP-07	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811008	Z2P-01	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811009	Z2P-02	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811010	Z2P-03	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811011	Z2P-04	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811012	Z2P-05	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811013	Z3P-01	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811014	Z3P-02	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811015	Z3P-03	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811016	Z3P-04	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811017	Z3P-05	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811018	Z3P-06	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811019	Z3P-07	EPA 3550	OEXT/1829	EPA 8082	GCSV/1385
603811001	TP-01	ASTM D2974-87	PMST/1186		
603811002	TP-02	ASTM D2974-87	PMST/1186		
603811003	TP-03	ASTM D2974-87	PMST/1186		
603811004	TP-04	ASTM D2974-87	PMST/1186		
603811005	TP-05	ASTM D2974-87	PMST/1186		
603811006	TP-06	ASTM D2974-87	PMST/1186		
603811007	TP-07	ASTM D2974-87	PMST/1186		
603811008	Z2P-01	ASTM D2974-87	PMST/1186		
603811009	Z2P-02	ASTM D2974-87	PMST/1186		
603811010	Z2P-03	ASTM D2974-87	PMST/1186		
603811011	Z2P-04	ASTM D2974-87	PMST/1186		
603811012	Z2P-05	ASTM D2974-87	PMST/1186		
603811013	Z3P-01	ASTM D2974-87	PMST/1186		
603811014	Z3P-02	ASTM D2974-87	PMST/1186		
603811015	Z3P-03	ASTM D2974-87	PMST/1186		
603811016	Z3P-04	ASTM D2974-87	PMST/1186		
603811017	Z3P-05	ASTM D2974-87	PMST/1186		
603811018	Z3P-06	ASTM D2974-87	PMST/1186		
603811019	Z3P-07	ASTM D2974-87	PMST/1186		
603811008	Z2P-01	EPA 3010	MPRP/1467	EPA 6010	ICP/1394
603811013	Z3P-01	EPA 3010	MPRP/1467	EPA 6010	ICP/1394





Request for Chemical Analysis and Chain of Custody Record

*BILL TO HERITAGE

Burns & McDonnell Engineering
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Attention: CRAIG STEVENS

Laboratory: PACE

Address: 9628 LORET

City/State/Zip: LENEXA, KS

Telephone:

Document Control No:

1652

Lab. Reference No. or Episode No.:

Project Number:

Sample Type

Client Name: DELPHI - OLATHES KS

Matrix

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Liquid	Solid	Gas	Number of Containers	Analysis				Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time					PCBS	TOXIC	LEAD	OTHER	
TP-01	DELPHI	11UGED					1/11/06	0830	X			1	X				001
TP-02								0845	X			1	X				002
TP-03								0900	X			1	X				003
TP-04								0915	X			1	X				004
TP-05								0925	X			1	X				005
TP-06								0930	X			1	X				006
TP-07								0940	X			1	X				007
Z2P-01								0955	X			1	X	X			008
Z2P-02								1000	X			1	X				009
Z2P-03								1005	X			1	X				010
Z2P-04								1010	X			1	X				011
Z2P-05								1015	X			1	X				012
Z3P-01								1040	X			1	X	X			013
Z3P-02								1045	X			1	X				014
Z3P-03								1050	X			1	X				015

Sampler (signature)

TIM STECHER

Sampler (signature)

Special Instructions:

* RUSH TAT - DUE FRIDAY!

Relinquished By (signature)

1. [Signature]

Date/Time

1/11/06 12:15

Received By (signature)

Melissa Moran

Date/Time

1/11/06 12:15

Ice Present in Container:

Yes ☒No ☐

Temperature Upon Receipt:

2.2

Relinquished By (signature):

2.

Date/Time

Received By (signature):

Date/Time

Laboratory Comments:

January 18, 2006

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114


RE: Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on January 11, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Connie Gardner for
Angie Brown
angela.brown@pacelabs.com

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

REPORT OF LABORATORY ANALYSIS

Page 1 of 18

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SAMPLE SUMMARY

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Lab ID	Sample ID	Matrix	Date Collected	Date Received
603835001	Z5P-01	Solid	01/11/06 13:20	01/11/06 16:30
603835002	Z5P-02	Solid	01/11/06 13:25	01/11/06 16:30
603835003	Z5P-03	Solid	01/11/06 13:30	01/11/06 16:30
603835004	Z5P-04	Solid	01/11/06 13:35	01/11/06 16:30
603835005	Z5P-05	Solid	01/11/06 13:40	01/11/06 16:30
603835006	Z5P-06	Solid	01/11/06 13:45	01/11/06 16:30
603835007	Z5P-07	Solid	01/11/06 13:50	01/11/06 16:30
603835008	TP2-01	Solid	01/11/06 14:20	01/11/06 16:30
603835009	TP2-02	Solid	01/11/06 14:25	01/11/06 16:30
603835010	TP2-03	Solid	01/11/06 14:30	01/11/06 16:30

REPORT OF LABORATORY ANALYSIS

Page 2 of 18

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SAMPLE ANALYTE COUNT

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Lab ID	Sample ID	Method	Analytes Reported
603835001	Z5P-01	ASTM D2974-87	1
		EPA 8082	9
603835002	Z5P-02	ASTM D2974-87	1
		EPA 8082	9
603835003	Z5P-03	ASTM D2974-87	1
		EPA 8082	9
603835004	Z5P-04	ASTM D2974-87	1
		EPA 8082	9
603835005	Z5P-05	ASTM D2974-87	1
		EPA 8082	9
603835006	Z5P-06	ASTM D2974-87	1
		EPA 8082	9
603835007	Z5P-07	ASTM D2974-87	1
		EPA 8082	9
603835008	TP2-01	ASTM D2974-87	1
		EPA 8082	9
603835009	TP2-02	ASTM D2974-87	1
		EPA 8082	9
603835010	TP2-03	ASTM D2974-87	1
		EPA 8082	9

REPORT OF LABORATORY ANALYSIS

Page 3 of 18

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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: Z5P-01 Lab ID: 603835001 Collected: 01/11/06 13:20 Received: 01/11/06 16:30 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND ug/kg		39.2	1	01/12/06 00:00	01/13/06 13:00	12674-11-2	
PCB-1221 (Aroclor 1221)	ND ug/kg		39.2	1	01/12/06 00:00	01/13/06 13:00	11104-28-2	
PCB-1232 (Aroclor 1232)	ND ug/kg		39.2	1	01/12/06 00:00	01/13/06 13:00	11141-16-5	
PCB-1242 (Aroclor 1242)	ND ug/kg		39.2	1	01/12/06 00:00	01/13/06 13:00	53469-21-9	
PCB-1248 (Aroclor 1248)	104 ug/kg		39.2	1	01/12/06 00:00	01/13/06 13:00	12672-29-6	
PCB-1254 (Aroclor 1254)	ND ug/kg		39.2	1	01/12/06 00:00	01/13/06 13:00	11097-69-1	
PCB-1260 (Aroclor 1260)	ND ug/kg		39.2	1	01/12/06 00:00	01/13/06 13:00	11096-82-5	
Tetrachloro-m-xylene (S)	82 %		33-135	1	01/12/06 00:00	01/13/06 13:00	877-09-8	
Decachlorobiphenyl (S)	83 %		28-150	1	01/12/06 00:00	01/13/06 13:00	2051-24-3	

Percent Moisture Analytical Method: ASTM D2974-87

Percent Moisture	16.0 %	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: Z5P-02 Lab ID: 603835002 Collected: 01/11/06 13:25 Received: 01/11/06 16:30 Matrix: Solid
Solid results reported on dry weight basis --

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	53469-21-9	
PCB-1248 (Aroclor 1248)	692000	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/12/06 00:00	01/17/06 10:27	877-09-8	1
Decachlorobiphenyl (S)	0 %		28-150	100	01/12/06 00:00	01/17/06 10:27	2051-24-3	1
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	24.4 %		0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: Z5P-03 Lab ID: 603835003 Collected: 01/11/06 13:30 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	53469-21-9	
PCB-1248 (Aroclor 1248)	53.6	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	11096-82-5	
Tetrachloro-m-xylene (S)	69	%	33-135	1	01/12/06 00:00	01/13/06 13:42	877-09-8	
Decachlorobiphenyl (S)	68	%	28-150	1	01/12/06 00:00	01/13/06 13:42	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	32.3	%	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

Sample: Z5P-04 Lab ID: 603835004 Collected: 01/11/06 13:35 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	53469-21-9	
PCB-1248 (Aroclor 1248)	415	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	11096-82-5	
Tetrachloro-m-xylene (S)	72 %		33-135	1	01/12/06 00:00	01/13/06 14:03	877-09-8	
Decachlorobiphenyl (S)	72 %		28-150	1	01/12/06 00:00	01/13/06 14:03	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	34.4 %	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: Z5P-05 Lab ID: 603835005 Collected: 01/11/06 13:40 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	53469-21-9	
PCB-1248 (Aroclor 1248)	843	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	11096-82-5	
Tetrachloro-m-xylene (S)	74	%	33-135	1	01/12/06 00:00	01/13/06 12:48	877-09-8	
Decachlorobiphenyl (S)	69	%	28-150	1	01/12/06 00:00	01/13/06 12:48	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	42.3 %	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

Sample: Z5P-06 Lab ID: 603835006 Collected: 01/11/06 13:45 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND ug/kg		4560	100	01/12/06 00:00	01/13/06 15:26	12674-11-2	
PCB-1221 (Aroclor 1221)	ND ug/kg		4560	100	01/12/06 00:00	01/13/06 15:26	11104-28-2	
PCB-1232 (Aroclor 1232)	ND ug/kg		4560	100	01/12/06 00:00	01/13/06 15:26	11141-16-5	
PCB-1242 (Aroclor 1242)	ND ug/kg		4560	100	01/12/06 00:00	01/13/06 15:26	53469-21-9	
PCB-1248 (Aroclor 1248)	25600 ug/kg		4560	100	01/12/06 00:00	01/13/06 15:26	12672-29-6	
PCB-1254 (Aroclor 1254)	ND ug/kg		4560	100	01/12/06 00:00	01/13/06 15:26	11097-69-1	
PCB-1260 (Aroclor 1260)	ND ug/kg		4560	100	01/12/06 00:00	01/13/06 15:26	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/12/06 00:00	01/13/06 15:26	877-09-8	1
Decachlorobiphenyl (S)	0 %		28-150	100	01/12/06 00:00	01/13/06 15:26	2051-24-3	1

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	27.9 %	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: Z5P-07 Lab ID: 603835007 Collected: 01/11/06 13:50 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	53469-21-9	
PCB-1248 (Aroclor 1248)	54.0	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	11096-82-5	
Tetrachloro-m-xylene (S)	83	%	33-135	1	01/12/06 00:00	01/13/06 13:23	877-09-8	
Decachlorobiphenyl (S)	83	%	28-150	1	01/12/06 00:00	01/13/06 13:23	2051-24-3	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	23.9	%	0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: TP2-01 Lab ID: 603835008 Collected: 01/11/06 14:20 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	53469-21-9	
PCB-1248 (Aroclor 1248)	75900	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/12/06 00:00	01/13/06 16:01	877-09-8	1
Decachlorobiphenyl (S)	0	%	28-150	100	01/12/06 00:00	01/13/06 16:01	2051-24-3	1

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	32.3 %	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: TP2-02 Lab ID: 603835009 Collected: 01/11/06 14:25 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	53469-21-9	
PCB-1248 (Aroclor 1248)	16800	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/12/06 00:00	01/13/06 16:18	877-09-8	1
Decachlorobiphenyl (S)	0	%	28-150	100	01/12/06 00:00	01/13/06 16:18	2051-24-3	1
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	35.9	%	0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: TP2-03 Lab ID: 603835010 Collected: 01/11/06 14:30 Received: 01/11/06 16:30 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	53469-21-9	
PCB-1248 (Aroclor 1248)	19800	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/12/06 00:00	01/13/06 16:05	877-09-8	1
Decachlorobiphenyl (S)	0 %		28-150	100	01/12/06 00:00	01/13/06 16:05	2051-24-3	1
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	31.0 %		0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS QUALIFIERS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

[1] Surrogate diluted out.

QUALITY CONTROL DATA

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

QC Batch: OEXT/1835 Analysis Method: EPA 8082
QC Batch Method: EPA 3550 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 603835001, 603835002, 603835003, 603835004, 603835005, 603835006, 603835007, 603835008, 603835009, 603835010

METHOD BLANK: 30722

Associated Lab Samples: 603835001, 603835002, 603835003, 603835004, 603835005, 603835006, 603835007, 603835008, 603835009, 603835010

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	71	33-135	
Decachlorobiphenyl (S)	%	80	28-150	

LABORATORY CONTROL SAMPLE: 30723

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	136	82	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	141	85	55-120	
Tetrachloro-m-xylene (S)	%			83	33-135	
Decachlorobiphenyl (S)	%			86	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 30724

30725

Parameter	Units	603835001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	197.7	198.9	183	188	92	95	46-120	3	17
PCB-1260 (Aroclor 1260)	ug/kg	ND	197.7	198.9	156	166	79	83	33-136	6	21
Tetrachloro-m-xylene (S)	%						78	82	33-135		
Decachlorobiphenyl (S)	%						79	80	28-150		

QUALITY CONTROL DATA

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

QC Batch: PMST/1188 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 603835001, 603835002, 603835003, 603835004, 603835005, 603835006, 603835007, 603835008, 603835009, 603835010

METHOD BLANK: 31079

Associated Lab Samples: 603835001, 603835002, 603835003, 603835004, 603835005, 603835006, 603835007, 603835008, 603835009, 603835010

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 31080

Parameter	Units	603835001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.0	17.4	8	20	

QUALITY CONTROL DATA QUALIFIERS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
603835001	Z5P-01	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835002	Z5P-02	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835003	Z5P-03	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835004	Z5P-04	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835005	Z5P-05	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835006	Z5P-06	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835007	Z5P-07	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835008	TP2-01	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835009	TP2-02	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835010	TP2-03	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835001	Z5P-01	ASTM D2974-87	PMST/1188		
603835002	Z5P-02	ASTM D2974-87	PMST/1188		
603835003	Z5P-03	ASTM D2974-87	PMST/1188		
603835004	Z5P-04	ASTM D2974-87	PMST/1188		
603835005	Z5P-05	ASTM D2974-87	PMST/1188		
603835006	Z5P-06	ASTM D2974-87	PMST/1188		
603835007	Z5P-07	ASTM D2974-87	PMST/1188		
603835008	TP2-01	ASTM D2974-87	PMST/1188		
603835009	TP2-02	ASTM D2974-87	PMST/1188		
603835010	TP2-03	ASTM D2974-87	PMST/1188		

January 20, 2006

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114

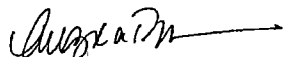
RE: Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on January 11, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown

angela.brown@pacelabs.com

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

REPORT OF LABORATORY ANALYSIS

Page 1 of 19

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SAMPLE SUMMARY

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

Lab ID	Sample ID	Matrix	Date Collected	Date Received
603835001	Z5P-01	Solid	01/11/06 13:20	01/11/06 16:30
603835002	Z5P-02	Solid	01/11/06 13:25	01/11/06 16:30
603835003	Z5P-03	Solid	01/11/06 13:30	01/11/06 16:30
603835004	Z5P-04	Solid	01/11/06 13:35	01/11/06 16:30
603835005	Z5P-05	Solid	01/11/06 13:40	01/11/06 16:30
603835006	Z5P-06	Solid	01/11/06 13:45	01/11/06 16:30
603835007	Z5P-07	Solid	01/11/06 13:50	01/11/06 16:30
603835008	TP2-01	Solid	01/11/06 14:20	01/11/06 16:30
603835009	TP2-02	Solid	01/11/06 14:25	01/11/06 16:30
603835010	TP2-03	Solid	01/11/06 14:30	01/11/06 16:30

REPORT OF LABORATORY ANALYSIS

SAMPLE ANALYTE COUNT

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

Lab ID	Sample ID	Method	Analytes Reported
603835001	Z5P-01	ASTM D2974-87	1
		EPA 6010	1
		EPA 8082	9
603835002	Z5P-02	ASTM D2974-87	1
		EPA 8082	9
603835003	Z5P-03	ASTM D2974-87	1
		EPA 8082	9
603835004	Z5P-04	ASTM D2974-87	1
		EPA 8082	9
603835005	Z5P-05	ASTM D2974-87	1
		EPA 8082	9
603835006	Z5P-06	ASTM D2974-87	1
		EPA 8082	9
603835007	Z5P-07	ASTM D2974-87	1
		EPA 8082	9
603835008	TP2-01	ASTM D2974-87	1
		EPA 8082	9
603835009	TP2-02	ASTM D2974-87	1
		EPA 8082	9
603835010	TP2-03	ASTM D2974-87	1
		EPA 8082	9

REPORT OF LABORATORY ANALYSIS

Page 3 of 19

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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: Z5P-01 Lab ID: 603835001 Collected: 01/11/06 13:20 Received: 01/11/06 16:30 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	39.2	1	01/12/06 00:00	01/13/06 13:00	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	39.2	1	01/12/06 00:00	01/13/06 13:00	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	39.2	1	01/12/06 00:00	01/13/06 13:00	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	39.2	1	01/12/06 00:00	01/13/06 13:00	53469-21-9	
PCB-1248 (Aroclor 1248)	104	ug/kg	39.2	1	01/12/06 00:00	01/13/06 13:00	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	39.2	1	01/12/06 00:00	01/13/06 13:00	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	39.2	1	01/12/06 00:00	01/13/06 13:00	11096-82-5	
Tetrachloro-m-xylene (S)	82	%	33-135	1	01/12/06 00:00	01/13/06 13:00	877-09-8	
Decachlorobiphenyl (S)	83	%	28-150	1	01/12/06 00:00	01/13/06 13:00	2051-24-3	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	ND	mg/L	0.50	1	01/19/06 00:00	01/19/06 16:57	7439-92-1	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	16.0	%	0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: Z5P-02 Lab ID: 603835002 Collected: 01/11/06 13:25 Received: 01/11/06 16:30 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	53469-21-9	
PCB-1248 (Aroclor 1248)	692000	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	43600	100	01/12/06 00:00	01/17/06 10:27	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/12/06 00:00	01/17/06 10:27	877-09-8	1
Decachlorobiphenyl (S)	0 %		28-150	100	01/12/06 00:00	01/17/06 10:27	2051-24-3	1
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	24.4	%	0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

Sample: Z5P-03 Lab ID: 603835003 Collected: 01/11/06 13:30 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	53469-21-9	
PCB-1248 (Aroclor 1248)	53.6	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	48.6	1	01/12/06 00:00	01/13/06 13:42	11096-82-5	
Tetrachloro-m-xylene (S)	69	%	33-135	1	01/12/06 00:00	01/13/06 13:42	877-09-8	
Decachlorobiphenyl (S)	68	%	28-150	1	01/12/06 00:00	01/13/06 13:42	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	32.3	%	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

Sample: Z5P-04 Lab ID: 603835004 Collected: 01/11/06 13:35 Received: 01/11/06 16:30 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	53469-21-9	
PCB-1248 (Aroclor 1248)	415	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	50.3	1	01/12/06 00:00	01/13/06 14:03	11096-82-5	
Tetrachloro-m-xylene (S)	72	%	33-135	1	01/12/06 00:00	01/13/06 14:03	877-09-8	
Decachlorobiphenyl (S)	72	%	28-150	1	01/12/06 00:00	01/13/06 14:03	2051-24-3	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	34.4	%	0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No : 603835

Sample: Z5P-05 Lab ID: 603835005 Collected: 01/11/06 13:40 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	53469-21-9	
PCB-1248 (Aroclor 1248)	843	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	57.1	1	01/12/06 00:00	01/13/06 12:48	11096-82-5	
Tetrachloro-m-xylene (S)	74	%	33-135	1	01/12/06 00:00	01/13/06 12:48	877-09-8	
Decachlorobiphenyl (S)	69	%	28-150	1	01/12/06 00:00	01/13/06 12:48	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	42.3 %	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

Sample: Z5P-06

Lab ID: 603835006

Collected: 01/11/06 13:45 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4560	100	01/12/06 00:00	01/13/06 15:26	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4560	100	01/12/06 00:00	01/13/06 15:26	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4560	100	01/12/06 00:00	01/13/06 15:26	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4560	100	01/12/06 00:00	01/13/06 15:26	53469-21-9	
PCB-1248 (Aroclor 1248)	25600	ug/kg	4560	100	01/12/06 00:00	01/13/06 15:26	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4560	100	01/12/06 00:00	01/13/06 15:26	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4560	100	01/12/06 00:00	01/13/06 15:26	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/12/06 00:00	01/13/06 15:26	877-09-8	1
Decachlorobiphenyl (S)	0 %		28-150	100	01/12/06 00:00	01/13/06 15:26	2051-24-3	1
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	27.9 %		0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: Z5P-07 Lab ID: 603835007 Collected: 01/11/06 13:50 Received: 01/11/06 16:30 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	53469-21-9	
PCB-1248 (Aroclor 1248)	54.0	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	43.3	1	01/12/06 00:00	01/13/06 13:23	11096-82-5	
Tetrachloro-m-xylene (S)	83	%	33-135	1	01/12/06 00:00	01/13/06 13:23	877-09-8	
Decachlorobiphenyl (S)	83	%	28-150	1	01/12/06 00:00	01/13/06 13:23	2051-24-3	
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	23.9	%	0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

Sample: TP2-01 Lab ID: 603835008 Collected: 01/11/06 14:20 Received: 01/11/06 16:30 Matrix: Solid
Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	53469-21-9	
PCB-1248 (Aroclor 1248)	75900	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4860	100	01/12/06 00:00	01/13/06 16:01	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/12/06 00:00	01/13/06 16:01	877-09-8	1
Decachlorobiphenyl (S)	0 %		28-150	100	01/12/06 00:00	01/13/06 16:01	2051-24-3	1
Percent Moisture Analytical Method: ASTM D2974-87								
Percent Moisture	32.3 %		0.10	1		01/12/06 00:00		

ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

Sample: TP2-02

Lab ID: 603835009

Collected: 01/11/06 14:25

Received: 01/11/06 16:30

Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB								
Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	53469-21-9	
PCB-1248 (Aroclor 1248)	16800	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	5150	100	01/12/06 00:00	01/13/06 16:18	11096-82-5	
Tetrachloro-m-xylene (S)	0	%	33-135	100	01/12/06 00:00	01/13/06 16:18	877-09-8	1
Decachlorobiphenyl (S)	0	%	28-150	100	01/12/06 00:00	01/13/06 16:18	2051-24-3	1

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	35.9	%	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Sample: TP2-03 Lab ID: 603835010 Collected: 01/11/06 14:30 Received: 01/11/06 16:30 Matrix: Solid

Solid results reported on dry weight basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3550								
PCB-1016 (Aroclor 1016)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	53469-21-9	
PCB-1248 (Aroclor 1248)	19800	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	4780	100	01/12/06 00:00	01/13/06 16:05	11096-82-5	
Tetrachloro-m-xylene (S)	0 %		33-135	100	01/12/06 00:00	01/13/06 16:05	877-09-8	1
Decachlorobiphenyl (S)	0 %		28-150	100	01/12/06 00:00	01/13/06 16:05	2051-24-3	1

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	31.0 %	0.10	1	01/12/06 00:00
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ANALYTICAL RESULTS QUALIFIERS

Project: DELPHI-OLATHE, KS

Pace Project No.: 603835

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

[1] Surrogate diluted out.

QUALITY CONTROL DATA

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

QC Batch: OEXT/1835 Analysis Method: EPA 8082
QC Batch Method: EPA 3550 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 603835001, 603835002, 603835003, 603835004, 603835005, 603835006, 603835007, 603835008, 603835009, 603835010

METHOD BLANK: 30722

Associated Lab Samples: 603835001, 603835002, 603835003, 603835004, 603835005, 603835006, 603835007, 603835008, 603835009, 603835010

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	71	33-135	
Decachlorobiphenyl (S)	%	80	28-150	

LABORATORY CONTROL SAMPLE: 30723

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	136	82	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	141	85	55-120	
Tetrachloro-m-xylene (S)	%			83	33-135	
Decachlorobiphenyl (S)	%			86	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 30724 30725

Parameter	Units	603835001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	197.7	198.9	183	188	92	95	46-120	3	17
PCB-1260 (Aroclor 1260)	ug/kg	ND	197.7	198.9	156	166	79	83	33-136	6	21
Tetrachloro-m-xylene (S)	%						78	82	33-135		
Decachlorobiphenyl (S)	%						79	80	28-150		

QUALITY CONTROL DATA

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

QC Batch: PMST/1188 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 603835001, 603835002, 603835003, 603835004, 603835005, 603835006, 603835007, 603835008, 603835009, 603835010

METHOD BLANK: 31079

Associated Lab Samples: 603835001, 603835002, 603835003, 603835004, 603835005, 603835006, 603835007, 603835008, 603835009, 603835010

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 31080

Parameter	Units	603835001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.0	17.4	8	20	

QUALITY CONTROL DATA

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

QC Batch: MPRP/1467 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 603835001

METHOD BLANK: 32500

Associated Lab Samples: 603835001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/L	ND	0.50	

LABORATORY CONTROL SAMPLE: 32501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	10	10.4	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 32502 32503

Parameter	Units	603811008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Lead	mg/L	31.5	10	10	42.4	42.6	109	110	75-125	0 20	

-----**QUALITY CONTROL DATA QUALIFIERS**

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: DELPHI-OLATHE, KS
Pace Project No.: 603835

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
603835001	Z5P-01	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835002	Z5P-02	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835003	Z5P-03	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835004	Z5P-04	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835005	Z5P-05	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835006	Z5P-06	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835007	Z5P-07	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835008	TP2-01	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835009	TP2-02	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835010	TP2-03	EPA 3550	OEXT/1835	EPA 8082	GCSV/1390
603835001	Z5P-01	ASTM D2974-87	PMST/1188		
603835002	Z5P-02	ASTM D2974-87	PMST/1188		
603835003	Z5P-03	ASTM D2974-87	PMST/1188		
603835004	Z5P-04	ASTM D2974-87	PMST/1188		
603835005	Z5P-05	ASTM D2974-87	PMST/1188		
603835006	Z5P-06	ASTM D2974-87	PMST/1188		
603835007	Z5P-07	ASTM D2974-87	PMST/1188		
603835008	TP2-01	ASTM D2974-87	PMST/1188		
603835009	TP2-02	ASTM D2974-87	PMST/1188		
603835010	TP2-03	ASTM D2974-87	PMST/1188		
603835001	Z5P-01	EPA 3010	MPRP/1467	EPA 6010	ICP/1394



Request for Chemical Analysis and Chain of Custody Record

BILL TO HERITAGE

Burns & McDonnell Engineering
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Attention: CRAIG STEVENS

Laboratory:

PACE

Address:

9600 ANALYTICAL

City/State/Zip:

LENEXA, KS

Telephone:

Document Control No:

603035

Lab. Reference No. or Episode No.:

Project Number:

Sample Type

Client Name:

DELPHI - OLATAH

Matrix

Sample Number

Sample Event

Sample Depth
(in feet)Sample
Collected

Liquid

Solid

Gas

Number of
Containers

Analysis

PCBS
ACUPLED

Remarks

Group or
SWMU NameSample
PointSample
Designator

Round

Year

From

To

Date

Time

DELPHI

Z5P-φ1

1(WGPH)

1/11/06 1320

X

1

X

001

Z5P-φ2

1325

X

1

X

002

Z5P-φ3

1330

X

1

X

003

Z5P-φ4

1335

X

1

X

004

Z5P-φ5

1340

X

1

X

005

Z5P-φ6

1345

X

1

X

006

Z5P-φ7

1350

X

1

X

007

TP2-φ1

1420

X

1

X

008

TP2-φ2

1425

X

1

X

009

TP2-φ3

1430

X

1

X

010

Sampler (signature)

TIM STEUTER

Sampler (signature)

Special Instructions:

RUSH TAT - DUE FRIDAY

Relinquished By (signature)

1. TIM STEUTER

Date/Time

1/11/06 1630

Received By (signature)

[Signature] / Pace

Date/Time

1/11/06 1630

Ice Present in Container:

Yes

No

Temperature Upon Receipt:

5.7

Relinquished By (signature)

Date/Time

Received By (signature)

Date/Time

Laboratory Comments:

December 28, 2005

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114


RE: Project: 603090
Project ID: DELPHI BATTERY

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on December 16, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown
angela.brown@pacelabs.com

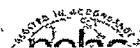
Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

Page 1 of 38

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 603090

Project ID: DELPHI BATTERY

Lab ID	Sample ID	Matrix	Date Collected	Date Received
603090001	Z1F04	Solid	12/16/05 15:06	12/16/05 17:20
603090002	Z1F03	Solid	12/16/05 15:02	12/16/05 17:20
603090003	Z1F02	Solid	12/16/05 14:58	12/16/05 17:20
603090004	Z1F06	Solid	12/16/05 15:14	12/16/05 17:20
603090005	Z1F01	Solid	12/16/05 14:14	12/16/05 17:20
603090006	Z1F05	Solid	12/16/05 15:11	12/16/05 17:20
603090007	Z1W01	Solid	12/16/05 14:03	12/16/05 17:20
603090008	Z1W02	Solid	12/16/05 14:12	12/16/05 17:20
603090009	Z1W03	Solid	12/16/05 14:20	12/16/05 17:20
603090010	Z1W04	Solid	12/16/05 14:26	12/16/05 17:20
603090011	Z1W06	Solid	12/16/05 14:41	12/16/05 17:20
603090012	Z1W05	Solid	12/16/05 14:35	12/16/05 17:20
603090013	Z1W07	Solid	12/16/05 14:55	12/16/05 17:20
603090014	Z2W01	Solid	12/16/05 14:48	12/16/05 17:20
603090015	P-89	Solid	12/05/05 13:30	12/16/05 17:20
603090016	P-109	Solid	12/12/05 14:37	12/16/05 17:20
603090017	P-114	Solid	12/12/05 15:41	12/16/05 17:20
603090018	P-116	Solid	12/12/05 16:07	12/16/05 17:20
603090019	P-139	Solid	12/12/05 16:33	12/16/05 17:20
603090020	P-145	Solid	12/14/05 09:58	12/16/05 17:20
603090021	P-150	Solid	12/14/05 11:15	12/16/05 17:20
603090022	P-156	Solid	12/14/05 14:12	12/16/05 17:20
603090023	P-167	Solid	12/14/05 16:32	12/16/05 17:20
603090024	P-171	Solid	12/15/05 10:06	12/16/05 17:20
603090025	P-172	Solid	12/15/05 10:15	12/16/05 17:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 603090

Project ID: DELPHI BATTERY

Lab ID	Sample ID	Method	Analytes Reported
603090001	Z1F04	ASTM D2974-87	1
		EPA 6010	1
603090002	Z1F03	ASTM D2974-87	1
		EPA 6010	1
603090003	Z1F02	ASTM D2974-87	1
		EPA 6010	1
603090004	Z1F06	ASTM D2974-87	1
		EPA 6010	1
603090005	Z1F01	ASTM D2974-87	1
		EPA 6010	1
603090006	Z1F05	ASTM D2974-87	1
		EPA 6010	1
603090007	Z1W01	ASTM D2974-87	1
		EPA 6010	1
603090008	Z1W02	ASTM D2974-87	1
		EPA 6010	1
603090009	Z1W03	ASTM D2974-87	1
		EPA 6010	1
603090010	Z1W04	ASTM D2974-87	1
		EPA 6010	1
603090011	Z1W06	ASTM D2974-87	1
		EPA 6010	1
603090012	Z1W05	ASTM D2974-87	1
		EPA 6010	1
603090013	Z1W07	ASTM D2974-87	1
		EPA 6010	1
603090014	Z2W01	ASTM D2974-87	1
		EPA 6010	1
603090015	P-89	ASTM D2974-87	1
		EPA 8082	7
603090016	P-109	ASTM D2974-87	1
		EPA 8082	9
603090017	P-114	ASTM D2974-87	1
		EPA 8082	9

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 603090

Project ID: DELPHI BATTERY

Lab ID	Sample ID	Method	Analytes Reported
603090018	P-116	ASTM D2974-87	1
		EPA 8082	9
603090019	P-139	ASTM D2974-87	1
		EPA 8082	9
603090020	P-145	ASTM D2974-87	1
		EPA 8082	9
603090021	P-150	ASTM D2974-87	1
		EPA 8082	9
603090022	P-156	ASTM D2974-87	1
		EPA 8082	9
603090023	P-167	ASTM D2974-87	1
		EPA 8082	9
603090024	P-171	ASTM D2974-87	1
		EPA 8082	9
603090025	P-172	ASTM D2974-87	1
		EPA 8082	9

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090001	Date Collected: 12/16/05 15:06	Matrix: Solid
Sample ID: Z1F04	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	-------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	14.5 mg/kg	0.65	1	12/22/05 00:00	SSM	12/23/05 10:26	TJG	7439-92-1
------	------------	------	---	----------------	-----	----------------	-----	-----------

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	25.1 %	0.10	1	12/21/05 00:00	JDM
------------------	--------	------	---	----------------	-----

Date: 12/28/2005

Page 5 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090002	Date Collected: 12/16/05 15:02	Matrix: Solid
Sample ID: Z1F03	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	15.4	mg/kg	0.63	1	12/22/05 00:00	SSM	12/23/05 10:31	TJG	7439-92-1		
------	------	-------	------	---	----------------	-----	----------------	-----	-----------	--	--

Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	23.8	%	0.10	1			12/21/05 00:00	JDM			
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Date: 12/28/2005

Page 6 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090003	Date Collected: 12/16/05 14:58	Matrix: Solid
Sample ID: Z1F02	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	-------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	14.9 mg/kg	0.65	1	12/22/05 00:00	SSM	12/23/05 10:37	TJG	7439-92-1		
------	------------	------	---	----------------	-----	----------------	-----	-----------	--	--

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	22.7 %	0.10	1	12/21/05 00:00	JDM					
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Date: 12/28/2005

Page 7 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090004	Date Collected: 12/16/05 15:14	Matrix: Solid
Sample ID: Z1F06	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	30.7 mg/kg	3.5	5	12/22/05 00:00	SSM	12/23/05 11:58	TJG	7439-92-1
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Met Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	28.4 %	0.10	1	12/21/05 00:00	JDM
------------------	--------	------	---	----------------	-----

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090005	Date Collected: 12/16/05 14:14	Matrix: Solid
Sample ID: Z1F01	Date Received: 12/16/05 17.20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	-------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	16.0	mg/kg	0.61	1	12/22/05 00:00	SSM	12/23/05 10:47	TJG	7439-92-1		
------	------	-------	------	---	----------------	-----	----------------	-----	-----------	--	--

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	22.7	%	0.10	1			12/21/05 00:00	JDM			
------------------	------	---	------	---	--	--	----------------	-----	--	--	--

Date: 12/28/2005

Page 9 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090006 Date Collected: 12/16/05 15:11 Matrix: Solid
Sample ID: Z1F05 Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	32.7	mg/kg	0.67	1	12/22/05 00:00	SSM	12/23/05 10:53	TJG	7439-92-1		
------	------	-------	------	---	----------------	-----	----------------	-----	-----------	--	--

Met Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	25.7	%	0.10	1	12/21/05 00:00	JDM					
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Date: 12/28/2005

Page 10 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis

Lab ID: 603090007	Date Collected: 12/16/05 14:03	Matrix: Solid
Sample ID: Z1W01	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	-------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	25.0 mg/kg	0.61	1	12/22/05 00:00	SSM	12/23/05 10:58	TJG	7439-92-1		
------	------------	------	---	----------------	-----	----------------	-----	-----------	--	--

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	19.1 %	0.10	1	12/21/05 00:00	JDM				
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Date: 12/28/2005

Page 11 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project. 603090

Project ID. DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090008	Date Collected: 12/16/05 14:12	Matrix: Solid
Sample ID: Z1W02	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	136 mg/kg	0.63	1	12/22/05 00:00	SSM	12/23/05 11:12	TJG	7439-92-1		
------	-----------	------	---	----------------	-----	----------------	-----	-----------	--	--

Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	22.0 %	0.10	1	12/21/05 00:00	JDM				
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Date: 12/28/2005

Page 12 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090009	Date Collected: 12/16/05 14:20	Matrix: Solid
Sample ID: Z1W03	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	2430 mg/kg	0.62	1	12/22/05 00:00	SSM	12/23/05 11:17	TJG	7439-92-1		
------	------------	------	---	----------------	-----	----------------	-----	-----------	--	--

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	22.5 %	0.10	1	12/21/05 00:00	JDM				
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Date: 12/28/2005

Page 13 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090010 Date Collected: 12/16/05 14:26 Matrix: Solid
Sample ID: Z1W04 Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	13000	mg/kg	15.5	25	12/22/05 00:00	SSM	12/23/05 11 43	TJG	7439-92-1		
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Net Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	20.9	%	0.10	1			12/21/05 00 00	JDM			
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Date: 12/28/2005

Page 14 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090011	Date Collected: 12/16/05 14:41	Matrix: Solid
Sample ID: Z1W06	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
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Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	22.8 mg/kg	0.61	1	12/22/05 00:00	SSM	12/23/05 11:28	TJG	7439-92-1		
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Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	21.4 %	0.10	1	12/21/05 00:00	JDM				
------------------	--------	------	---	----------------	-----	--	--	--	--

Date: 12/28/2005

Page 15 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090012	Date Collected: 12/16/05 14:35	Matrix: Solid
Sample ID: Z1W05	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	44.6	mg/kg	0.62	1	12/22/05 00:00	SSM	12/23/05 11:33	TJG	7439-92-1		
------	------	-------	------	---	----------------	-----	----------------	-----	-----------	--	--

Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	23.8	%	0.10	1			12/21/05 00:00	JDM			
------------------	------	---	------	---	--	--	----------------	-----	--	--	--

Date: 12/28/2005

Page 16 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090013

Date Collected: 12/16/05 14:55

Matrix: Solid

Sample ID: Z1W07

Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	20.1 mg/kg		0.64	1	12/22/05 00:00	SSM	12/23/05 11:39	TJG	7439-92-1		
------	------------	--	------	---	----------------	-----	----------------	-----	-----------	--	--

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	23.3 %		0.10	1			12/21/05 00:00	JDM			
------------------	--------	--	------	---	--	--	----------------	-----	--	--	--

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090014	Date Collected: 12/16/05 14:48	Matrix: Solid
Sample ID: Z2W01	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

Metals

6010 MET ICP

Preparation Method: EPA 3050

Analytical Method: EPA 6010

Lead	863 mg/kg	0.64	1	12/22/05 00:00	SSM	12/23/05 11:47	TJG	7439-92-1		
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Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	24.2 %	0.10	1	12/21/05 00:00	JDM				
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Date: 12/28/2005

Page 18 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis

Lab ID: 603090015 Date Collected: 12/05/05 13:30 Matrix: Solid
Sample ID: P-89 Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	171	5	12/19/05 00:00	JDM	12/19/05 19:34	EMA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	171	5	12/19/05 00:00	JDM	12/19/05 19:34	EMA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	171	5	12/19/05 00:00	JDM	12/19/05 19:34	EMA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	171	5	12/19/05 00:00	JDM	12/19/05 19:34	EMA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	171	5	12/19/05 00:00	JDM	12/19/05 19:34	EMA	12672-29-6		
PCB-1254 (Aroclor 1254)	1400	ug/kg	171	5	12/19/05 00:00	JDM	12/19/05 19:34	EMA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	171	5	12/19/05 00:00	JDM	12/19/05 19:34	EMA	11096-82-5		

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	3.5 %	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 19 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090016

Date Collected: 12/12/05 14:37

Matrix: Solid

Sample ID: P-109

Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	69.4	2	12/22/05 00:00	BAG	12/24/05 19:24	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	69.4	2	12/22/05 00:00	BAG	12/24/05 19:24	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	69.4	2	12/22/05 00:00	BAG	12/24/05 19:24	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	69.4	2	12/22/05 00:00	BAG	12/24/05 19:24	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	69.4	2	12/22/05 00:00	BAG	12/24/05 19:24	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	483	ug/kg	69.4	2	12/22/05 00:00	BAG	12/24/05 19:24	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	69.4	2	12/22/05 00:00	BAG	12/24/05 19:24	WA	11096-82-5		
1,2,3,4-tetrachloro-m-xylene (S)	93	%	33-135	2	12/22/05 00:00	BAG	12/24/05 19:24	WA	877-09-8		
Decachlorobiphenyl (S)	86	%	28-150	2	12/22/05 00:00	BAG	12/24/05 19:24	WA	2051-24-3		

Vet Chemistry

Percent Moisture

Analytical Method ASTM D2974-87

Percent Moisture

5.0 %

0.10

1

12/21/05 00:00 JDM

Date: 12/28/2005

Page 20 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090017	Date Collected: 12/12/05 15:41	Matrix: Solid
Sample ID: P-114	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	1720	50	12/22/05 00:00	BAG	12/24/05 19:45	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	1720	50	12/22/05 00:00	BAG	12/24/05 19:45	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	1720	50	12/22/05 00:00	BAG	12/24/05 19:45	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	1720	50	12/22/05 00:00	BAG	12/24/05 19:45	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	1720	50	12/22/05 00:00	BAG	12/24/05 19:45	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	15500	ug/kg	1720	50	12/22/05 00:00	BAG	12/24/05 19:45	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	1720	50	12/22/05 00:00	BAG	12/24/05 19:45	WA	11096-82-5		
Tetrachloro-m-xylene (S)	0 %		33-135	50	12/22/05 00:00	BAG	12/24/05 19:45	WA	877-09-8	1	
Decachlorobiphenyl (S)	0 %		28-150	50	12/22/05 00:00	BAG	12/24/05 19:45	WA	2051-24-3	1	

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	4.1 %	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 21 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090018 Date Collected: 12/12/05 16:07 Matrix: Solid
Sample ID: P-116 Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	338000	10000	12/22/05 00:00	BAG	12/24/05 21:51	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	338000	10000	12/22/05 00:00	BAG	12/24/05 21:51	WA	11104-28-2		
CB-1232 (Aroclor 1232)	ND	ug/kg	338000	10000	12/22/05 00:00	BAG	12/24/05 21:51	WA	11141-16-5		
CB-1242 (Aroclor 1242)	ND	ug/kg	338000	10000	12/22/05 00:00	BAG	12/24/05 21:51	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	338000	10000	12/22/05 00:00	BAG	12/24/05 21:51	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	644000	ug/kg	338000	10000	12/22/05 00:00	BAG	12/24/05 21:51	WA	11097-69-1		
CB-1260 (Aroclor 1260)	ND	ug/kg	338000	10000	12/22/05 00:00	BAG	12/24/05 21:51	WA	11096-82-5		
tetrachloro-m-xylene (S)	0	%	33-135	10000	12/22/05 00:00	BAG	12/24/05 21:51	WA	877-09-8	1	
Decachlorobiphenyl (S)	0	%	28-150	10000	12/22/05 00:00	BAG	12/24/05 21:51	WA	2051-24-3	1	

Net Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	2.4	%	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 22 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090019 Date Collected: 12/12/05 16:33 Matrix: Solid
Sample ID: P-139 Date Received: 12/16/05 17 20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm*
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:06	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:06	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:06	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:06	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:06	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	2540	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:06	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:06	WA	11096-82-5		
Tetrachloro-m-xylene (S)	0 %		33-135	50	12/22/05 00:00	BAG	12/24/05 20:06	WA	877-09-8	2	
Decachlorobiphenyl (S)	0 %		28-150	50	12/22/05 00:00	BAG	12/24/05 20:06	WA	2051-24-3	1	

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	3.0 %	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 23 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090020 Date Collected: 12/14/05 09:58 Matrix: Solid
Sample ID: P-145 Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	34.3	1	12/22/05 00:00	BAG	12/23/05 22:00	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	34.3	1	12/22/05 00:00	BAG	12/23/05 22:00	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	34.3	1	12/22/05 00:00	BAG	12/23/05 22:00	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	34.3	1	12/22/05 00:00	BAG	12/23/05 22:00	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	34.3	1	12/22/05 00:00	BAG	12/23/05 22:00	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	290	ug/kg	34.3	1	12/22/05 00:00	BAG	12/23/05 22:00	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	34.3	1	12/22/05 00:00	BAG	12/23/05 22:00	WA	11096-82-5		
Tetrachloro-m-xylene (S)	88	%	33-135	1	12/22/05 00:00	BAG	12/23/05 22:00	WA	877-09-8		
Decachlorobiphenyl (S)	85	%	28-150	1	12/22/05 00:00	BAG	12/23/05 22:00	WA	2051-24-3		

Net Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	3.9	%	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 24 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090021 Date Collected: 12/14/05 11:15 Matrix: Solid
Sample ID: P-150 Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	34.2	1	12/22/05 00:00	BAG	12/23/05 22:21	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	34.2	1	12/22/05 00:00	BAG	12/23/05 22:21	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	34.2	1	12/22/05 00:00	BAG	12/23/05 22:21	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	34.2	1	12/22/05 00:00	BAG	12/23/05 22:21	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	34.2	1	12/22/05 00:00	BAG	12/23/05 22:21	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	149	ug/kg	34.2	1	12/22/05 00:00	BAG	12/23/05 22:21	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	34.2	1	12/22/05 00:00	BAG	12/23/05 22:21	WA	11096-82-5		
Tetrachloro-m-xylene (S)	90	%	33-135	1	12/22/05 00:00	BAG	12/23/05 22:21	WA	877-09-8		
Decachlorobiphenyl (S)	86	%	28-150	1	12/22/05 00:00	BAG	12/23/05 22:21	WA	2051-24-3		

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	3.7	%	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 25 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090022 Date Collected: 12/14/05 14:12 Matrix: Solid
Sample ID: P-156 Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:27	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:27	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:27	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:27	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:27	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	3310	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:27	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	1700	50	12/22/05 00:00	BAG	12/24/05 20:27	WA	11096-82-5		
Tetrachloro-m-xylene (S)	0	%	33-135	50	12/22/05 00:00	BAG	12/24/05 20:27	WA	877-09-8	1	
Decachlorobiphenyl (S)	0	%	28-150	50	12/22/05 00:00	BAG	12/24/05 20:27	WA	2051-24-3	1	

Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	2.9	%	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 26 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090023	Date Collected: 12/14/05 16:32	Matrix: Solid
Sample ID: P-167	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/kg	1670	50	12/22/05 00:00	BAG	12/24/05 20:48	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND ug/kg	1670	50	12/22/05 00:00	BAG	12/24/05 20:48	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND ug/kg	1670	50	12/22/05 00:00	BAG	12/24/05 20:48	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND ug/kg	1670	50	12/22/05 00:00	BAG	12/24/05 20:48	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND ug/kg	1670	50	12/22/05 00:00	BAG	12/24/05 20:48	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	3120 ug/kg	1670	50	12/22/05 00:00	BAG	12/24/05 20:48	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND ug/kg	1670	50	12/22/05 00:00	BAG	12/24/05 20:48	WA	11096-82-5		
Tetrachloro-m-xylene (S)	0 %	33-135	50	12/22/05 00:00	BAG	12/24/05 20:48	WA	877-09-8	1	
Decachlorobiphenyl (S)	0 %	28-150	50	12/22/05 00:00	BAG	12/24/05 20:48	WA	2051-24-3	1	

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	16 %	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 27 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis

Lab ID: 603090024 Date Collected: 12/15/05 10:06 Matrix: Solid
Sample ID: P-171 Date Received: 12/16/05 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	34.6	1	12/22/05 00:00	BAG	12/26/05 15:52	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	34.6	1	12/22/05 00:00	BAG	12/26/05 15:52	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	34.6	1	12/22/05 00:00	BAG	12/26/05 15:52	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	34.6	1	12/22/05 00:00	BAG	12/26/05 15:52	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	34.6	1	12/22/05 00:00	BAG	12/26/05 15:52	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	290	ug/kg	34.6	1	12/22/05 00:00	BAG	12/26/05 15:52	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	34.6	1	12/22/05 00:00	BAG	12/26/05 15:52	WA	11096-82-5		
Tetrachloro-m-xylene (S)	92	%	33-135	1	12/22/05 00:00	BAG	12/26/05 15:52	WA	877-09-8		
Decachlorobiphenyl (S)	90	%	28-150	1	12/22/05 00:00	BAG	12/26/05 15:52	WA	2051-24-3		

Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	4.8	%	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 28 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603090

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 603090025	Date Collected: 12/15/05 10:15	Matrix: Solid
Sample ID: P-172	Date Received: 12/16/05 17:20	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/kg	348	10	12/22/05 00:00	BAG	12/26/05 16:13	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND ug/kg	348	10	12/22/05 00:00	BAG	12/26/05 16:13	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND ug/kg	348	10	12/22/05 00:00	BAG	12/26/05 16:13	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND ug/kg	348	10	12/22/05 00:00	BAG	12/26/05 16:13	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND ug/kg	348	10	12/22/05 00:00	BAG	12/26/05 16:13	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	1760 ug/kg	348	10	12/22/05 00:00	BAG	12/26/05 16:13	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND ug/kg	348	10	12/22/05 00:00	BAG	12/26/05 16:13	WA	11096-82-5		
Tetrachloro-m-xylene (S)	0 %	33-135	10	12/22/05 00:00	BAG	12/26/05 16:13	WA	877-09-8	1	
Decachlorobiphenyl (S)	0 %	28-150	10	12/22/05 00:00	BAG	12/26/05 16:13	WA	2051-24-3	1	

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	5.1 %	0.10	1	12/21/05 00:00	JDM
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Date: 12/28/2005

Page 29 of 38

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS QUALIFIERS

Project: 603090

Project ID: DELPHI BATTERY

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

[1] Surrogate diluted out.

[2] Surrogate diluted out.v

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 603090

Project ID: DELPHI BATTERY

QC Batch: OEXT/1657

Analysis Method: EPA 8082

QC Batch Method: EPA 3550

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 603090015

METHOD BLANK: 24805

Associated Lab Samples: 603090015

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	85	33-135	
Decachlorobiphenyl (S)	%	79	28-150	

LABORATORY CONTROL SAMPLE: 24806

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	135	81	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	142	85	55-120	
Tetrachloro-m-xylene (S)	%			80	33-135	
Decachlorobiphenyl (S)	%			78	28-150	

Date: 12/28/2005

Page 31 of 38

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QUALITY CONTROL DATA

Project: 603090

Project ID: DELPHI BATTERY

QC Batch:	PMST/1159	Analysis Method:	ASTM D2974-87			
QC Batch Method:	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture			
Associated Lab Samples:	603090001	603090002	603090003	603090004	603090005	603090006
	603090007	603090008	603090009	603090010		

METHOD BLANK: 25630

Associated Lab Samples:	603090001	603090002	603090003	603090004	603090005	603090006
	603090007	603090008	603090009	603090010		

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 25631

Parameter	Units	603039004 Result	DUP Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.5	29.7	1	20	

Date: 12/28/2005

Page 32 of 38

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 603090

Project ID: DELPHI BATTERY

QC Batch:	PMST/1160	Analysis Method:	ASTM D2974-87			
QC Batch Method:	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture			
Associated Lab Samples:	603090011	603090012	603090013	603090014	603090015	603090016
	603090017	603090018	603090019	603090020	603090021	603090022
	603090023	603090024	603090025			

METHOD BLANK: 25632

Associated Lab Samples:	603090011	603090012	603090013	603090014	603090015	603090016
	603090017	603090018	603090019	603090020	603090021	603090022
	603090023	603090024	603090025			

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 25633

Parameter	Units	603090011 Result	DUP Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	21.4	21.7	1	20	

Date: 12/28/2005

Page 33 of 38

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 603090

Project ID: DELPHI BATTERY

QC Batch:	MPRP/1376	Analysis Method:	EPA 6010			
QC Batch Method:	EPA 3050	Analysis Description:	6010 MET			
Associated Lab Samples:	603090001	603090002	603090003	603090004	603090005	603090006
	603090007	603090008	603090009	603090010	603090011	603090012
	603090013	603090014				

METHOD BLANK: 25905

Associated Lab Samples:	603090001	603090002	603090003	603090004	603090005	603090006
	603090007	603090008	603090009	603090010	603090011	603090012
	603090013	603090014				

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/kg	ND	0.50	

LABORATORY CONTROL SAMPLE: 25906

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	50	52.8	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 25907 25908

Parameter	Units	603039006 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	Max RPD	Qualifiers
Lead	mg/kg	57.8	49.49	164	97.2	213	79	75-125	51	20.31	

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QUALITY CONTROL DATA

Project: 603090

Project ID: DELPHI BATTERY

QC Batch: OEXT/1711

Analysis Method: EPA 8082

QC Batch Method: EPA 3550

Analysis Description: 8082 GCS PCB

Associated Lab Samples:	603090016	603090017	603090018	603090019	603090020	603090021
	603090022	603090023	603090024	603090025	603177001	603177002

METHOD BLANK: 26029

Associated Lab Samples:	603090016	603090017	603090018	603090019	603090020	603090021
	603090022	603090023	603090024	603090025		

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	88	33-135	
Decachlorobiphenyl (S)	%	96	28-150	

LABORATORY CONTROL SAMPLE: 26030

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	174	104	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	173	104	55-120	
Tetrachloro-m-xylene (S)	%			90	33-135	
Decachlorobiphenyl (S)	%			99	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26031 26032

Parameter	Units	603024001 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	166	133	136	80	82	46-120	2	17	
PCB-1260 (Aroclor 1260)	ug/kg	ND	166	188	147	113	88	33-136	25	21	2
Tetrachloro-m-xylene (S)	%					73	72	33-135			
Decachlorobiphenyl (S)	%					82	79	28-150			

Date: 12/28/2005

Page 35 of 38

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QUALITY CONTROL DATA QUALIFIERS

Project: 603090
Project ID: DELPHI BATTERY

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

- [1] RPD is outside the control limits.
- [2] The calculated RPD was outside QC acceptance limits. Successful recovery of the LCS demonstrates that the analytical system was in control.
- [3] The matrix spike recoveries are the control limits. Batch acceptance based on LCS recovery

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 603090

Project ID: DELPHI BATTERY

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
603090015	P-89	EPA 3550	OEXT/1657	EPA 8082	GCSV/1288
603090001	Z1F04	ASTM D2974-87	PMST/1159		
603090002	Z1F03	ASTM D2974-87	PMST/1159		
603090003	Z1F02	ASTM D2974-87	PMST/1159		
603090004	Z1F06	ASTM D2974-87	PMST/1159		
603090005	Z1F01	ASTM D2974-87	PMST/1159		
603090006	Z1F05	ASTM D2974-87	PMST/1159		
603090007	Z1W01	ASTM D2974-87	PMST/1159		
603090008	Z1W02	ASTM D2974-87	PMST/1159		
603090009	Z1W03	ASTM D2974-87	PMST/1159		
603090010	Z1W04	ASTM D2974-87	PMST/1159		
603090011	Z1W06	ASTM D2974-87	PMST/1160		
603090012	Z1W05	ASTM D2974-87	PMST/1160		
603090013	Z1W07	ASTM D2974-87	PMST/1160		
603090014	Z2W01	ASTM D2974-87	PMST/1160		
603090015	P-89	ASTM D2974-87	PMST/1160		
603090016	P-109	ASTM D2974-87	PMST/1160		
603090017	P-114	ASTM D2974-87	PMST/1160		
603090018	P-116	ASTM D2974-87	PMST/1160		
603090019	P-139	ASTM D2974-87	PMST/1160		
603090020	P-145	ASTM D2974-87	PMST/1160		
603090021	P-150	ASTM D2974-87	PMST/1160		
603090022	P-156	ASTM D2974-87	PMST/1160		
603090023	P-167	ASTM D2974-87	PMST/1160		
603090024	P-171	ASTM D2974-87	PMST/1160		
603090025	P-172	ASTM D2974-87	PMST/1160		
603090001	Z1F04	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090002	Z1F03	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090003	Z1F02	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090004	Z1F06	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090005	Z1F01	EPA 3050	MPRP/1376	EPA 6010	ICP/1325

Date: 12/28/2005

Page 37 of 38

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 603090
Project ID: DELPHI BATTERY

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
603090006	Z1F05	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090007	Z1W01	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090008	Z1W02	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090009	Z1W03	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090010	Z1W04	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090011	Z1W06	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090012	Z1W05	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090013	Z1W07	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090014	Z2W01	EPA 3050	MPRP/1376	EPA 6010	ICP/1325
603090016	P-109	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603090017	P-114	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603090018	P-116	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603090019	P-139	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603090020	P-145	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603090021	P-150	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603090022	P-156	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603090023	P-167	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603090024	P-171	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603090025	P-172	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316

REPORT OF LABORATORY ANALYSIS

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Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Engineering
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Laboratory: Pace Analytical
Address: 9608 Loriet Blvd.
City/State/Zip: Lincoln, MO 66219
Telephone: (913) 599-5665

Document Control No: 12162005 1 of 1

Lab. Reference No. or Episode No.:

Attention: Craig StevensProject Number: Delphi -- B71 Heritage

Sample Type

Client Name: Delphi Battery

Matrix

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Liquid	Solid	Gas	Number of Containers	Analysis				Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time					PCB	Total Lead			
Temp Blank			01	2005			12/16/05	1500									
	Z1F04		01				12/16/05	1506		X		1	X			11WGFU	001
	Z1F03						12/16/05	1502		X		1	X				002
	Z1F02						12/16/05	1458		X		1	X				003
	Z1F00						12/16/05	1514		X		1	X				004
	Z1F01						12/16/05	1414		X		1	X				005
	Z1F05						12/16/05	1571		X		1	X				006
	Z1W01						12/16/05	1403		X		1	X				007
	Z1W02							1412		X		1	X				008
	Z1W03							1420		X		1	X				009
	Z1W04							1426		X		1	X				010
	Z1W06							1441		X		1	X				011
	Z1W05							1435		X		1	X				012
	Z1W07							1455		X		1	X				013
	Z2W01							1448		X		1	X				014

Sampler (signature)

Sampler (signature)

Special Instructions:

Relinquished By (signature)

Date/Time

Received By (signature)

Date/Time

Ice Present in Container:

Temperature Upon Receipt:

1.

Date/Time

Received By (signature)

Date/Time

Ice Present in Container:

Temperature Upon Receipt:

Relinquished By (signature)

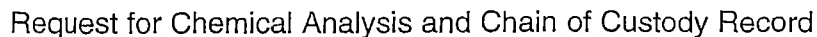
Date/Time

Received By (signature)

Date/Time

Laboratory Comments:

2.



Laboratory Comments:

2.

January 05, 2006

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114

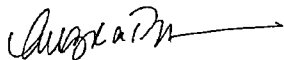
RE: Project: 603116
Project ID: Delphi Battery

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on December 15, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown
angela.brown@pacelabs.com

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

Page 1 of 12

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 603116

Project ID. Delphi Battery

Lab ID	Sample ID	Matrix	Date Collected	Date Received
603116001	P-25	Solid	11/30/05 13:40	12/15/05 14:50
603116002	P-135	Solid	12/13/05 16:00	12/15/05 14:50
603116003	P-136	Solid	12/13/05 16:07	12/15/05 14:50
603116004	P-79	Solid	12/01/05 15:42	12/15/05 14:50
603116005	P-10	Solid	11/29/05 15:04	12/15/05 14:50
603116006	P-63	Solid	12/01/05 10:33	12/15/05 14:50
603116007	P-28	Solid	11/30/05 14:12	12/15/05 14:50
603116008	P-12	Solid	11/29/05 16:13	12/15/05 14:50
603116009	RINSATE 004	Water	12/15/05 13:50	12/15/05 14:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 603116

Project ID: Delphi Battery

Lab ID	Sample ID	Method	Analytes Reported
603116002	P-135	ASTM D2974-87	1
		EPA 8082	9
603116003	P-136	ASTM D2974-87	1
		EPA 8082	9
603116009	RINSATE 004	EPA 8082	9

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603116

Project ID: Delphi Battery

The solid samples are reported on a dry weight basis

Lab ID: 603116002	Date Collected: 12/13/05 16:00	Matrix: Solid
Sample ID: P-135	Date Received: 12/15/05 14:50	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/kg	35.3	1	12/22/05 00:00	BAG	12/26/05 16:34	WA	12674-11-2
PCB-1221 (Aroclor 1221)	ND ug/kg	35.3	1	12/22/05 00:00	BAG	12/26/05 16:34	WA	11104-28-2
PCB-1232 (Aroclor 1232)	ND ug/kg	35.3	1	12/22/05 00:00	BAG	12/26/05 16:34	WA	11141-16-5
PCB-1242 (Aroclor 1242)	ND ug/kg	35.3	1	12/22/05 00:00	BAG	12/26/05 16:34	WA	53469-21-9
PCB-1248 (Aroclor 1248)	ND ug/kg	35.3	1	12/22/05 00:00	BAG	12/26/05 16:34	WA	12672-29-6
PCB-1254 (Aroclor 1254)	ND ug/kg	35.3	1	12/22/05 00:00	BAG	12/26/05 16:34	WA	11097-69-1
PCB-1260 (Aroclor 1260)	ND ug/kg	35.3	1	12/22/05 00:00	BAG	12/26/05 16:34	WA	11096-82-5
Tetrachloro-m-xylene (S)	82 %	33-135	1	12/22/05 00:00	BAG	12/26/05 16:34	WA	877-09-8
Decachlorobiphenyl (S)	85 %	28-150	1	12/22/05 00:00	BAG	12/26/05 16:34	WA	2051-24-3

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	6.7 %	0.10	1	12/21/05 00:00	JDM
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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603116

Project ID: Delphi Battery

The solid samples are reported on a dry weight basis.

Lab ID: 603116003	Date Collected: 12/13/05 16:07	Matrix: Solid
Sample ID: P-136	Date Received: 12/15/05 14.50	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	-------

GC Semivolatiles

8082 GCS PCB

Preparation Method EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/kg	340	10	12/22/05 00:00	BAG	12/27/05 13:57	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND ug/kg	340	10	12/22/05 00:00	BAG	12/27/05 13:57	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND ug/kg	340	10	12/22/05 00:00	BAG	12/27/05 13:57	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND ug/kg	340	10	12/22/05 00:00	BAG	12/27/05 13:57	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND ug/kg	340	10	12/22/05 00:00	BAG	12/27/05 13:57	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	651 ug/kg	340	10	12/22/05 00:00	BAG	12/27/05 13:57	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND ug/kg	340	10	12/22/05 00:00	BAG	12/27/05 13:57	WA	11096-82-5		
Tetrachloro-m-xylene (S)	0 %	33-135	10	12/22/05 00:00	BAG	12/27/05 13:57	WA	877-09-8	1	
Decachlorobiphenyl (S)	0 %	28-150	10	12/22/05 00:00	BAG	12/27/05 13:57	WA	2051-24-3	1	

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	3.2 %	0.10	1	12/21/05 00 00	JDM
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Date: 01/05/2006

Page 5 of 12

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603116

Project ID: Delphi Battery

The solid samples are reported on a dry weight basis

Lab ID: 603116009	Date Collected: 12/15/05 13:50	Matrix: Water
Sample ID: RINSATE 004	Date Received: 12/15/05 14:50	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3510

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/L	1.0	1	12/20/05 00:00	JDM	12/22/05 21:52	WA	12674-11-2
PCB-1221 (Aroclor 1221)	ND ug/L	1.0	1	12/20/05 00:00	JDM	12/22/05 21:52	WA	11104-28-2
PCB-1232 (Aroclor 1232)	ND ug/L	1.0	1	12/20/05 00:00	JDM	12/22/05 21:52	WA	11141-16-5
PCB-1242 (Aroclor 1242)	ND ug/L	1.0	1	12/20/05 00:00	JDM	12/22/05 21:52	WA	53469-21-9
PCB-1248 (Aroclor 1248)	ND ug/L	1.0	1	12/20/05 00:00	JDM	12/22/05 21:52	WA	12672-29-6
PCB-1254 (Aroclor 1254)	ND ug/L	1.0	1	12/20/05 00:00	JDM	12/22/05 21:52	WA	11097-69-1
PCB-1260 (Aroclor 1260)	ND ug/L	1.0	1	12/20/05 00:00	JDM	12/22/05 21:52	WA	11096-82-5
Tetrachloro-m-xylene (S)	76 %	30-118	1	12/20/05 00:00	JDM	12/22/05 21:52	WA	877-09-8
Decachlorobiphenyl (S)	77 %	35-120	1	12/20/05 00:00	JDM	12/22/05 21:52	WA	2051-24-3

Date: 01/05/2006

Page 6 of 12

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS QUALIFIERS

Project: 603116

Project ID: Delphi Battery

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

[1] Surrogate diluted out.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 603116
Project ID: Delphi Battery

QC Batch: OEXT/1682 Analysis Method: EPA 8082
QC Batch Method: EPA 3510 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 603116009

METHOD BLANK: 25080
Associated Lab Samples: 603116009

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
CB-1016 (Aroclor 1016)	ug/L	ND	0.50	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.50	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.50	
CB-1242 (Aroclor 1242)	ug/L	ND	0.50	
CB-1248 (Aroclor 1248)	ug/L	ND	0.50	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.50	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.50	
tetrachloro-m-xylene (S)	%	77	30-118	
decachlorobiphenyl (S)	%	73	35-120	

LABORATORY CONTROL SAMPLE: 25081

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	2.5	2.2	90	47-115	
PCB-1260 (Aroclor 1260)	ug/L	2.5	2.1	86	54-115	
tetrachloro-m-xylene (S)	%			74	30-118	
Decachlorobiphenyl (S)	%			71	35-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 25082 25083

Parameter	Units	602827001 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	2.5	1.9	2.0	77	81	45-115	5	17
PCB-1260 (Aroclor 1260)	ug/L	ND	2.5	2.2	2.5	90	98	44-126	9	21
tetrachloro-m-xylene (S)	%					65	70	30-118		
Decachlorobiphenyl (S)	%					72	75	35-120		

Date: 01/05/2006

Page 8 of 12

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 603116
Project ID: Delphi Battery

QC Batch: PMST/1160 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 603116002 603116003

METHOD BLANK: 25632

Associated Lab Samples: 603116002 603116003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 25633

Parameter	Units	603090011 Result	DUP Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	21.4	21.7	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 603116

Project ID: Delphi Battery

QC Batch: OEXT/1711 Analysis Method: EPA 8082
QC Batch Method: EPA 3550 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 603116002 603116003

METHOD BLANK: 26029

Associated Lab Samples: 603116002 603116003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	88	33-135	
Decachlorobiphenyl (S)	%	96	28-150	

LABORATORY CONTROL SAMPLE: 26030

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	174	104	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	173	104	55-120	
Tetrachloro-m-xylene (S)	%			90	33-135	
Decachlorobiphenyl (S)	%			99	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26031 26032

Parameter	Units	603024001 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	166	133	136	80	82	46-120	2	17	
PCB-1260 (Aroclor 1260)	ug/kg	ND	166	188	147	113	88	33-136	25	21	1
Tetrachloro-m-xylene (S)	%					73	72	33-135			
Decachlorobiphenyl (S)	%					82	79	28-150			

Date: 01/05/2006

Page 10 of 12

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA QUALIFIERS

Project: 603116

Project ID: Delphi Battery

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

- [1] The calculated RPD was outside QC acceptance limits. Successful recovery of the LCS demonstrates that the analytical system was in control.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

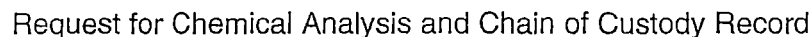
Project: 603116

Project ID: Delphi Battery

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
603116009	RINSATE 004	EPA 3510	OEXT/1682	EPA 8082	GCSV/1303
603116002	P-135	ASTM D2974-87	PMST/1160		
603116003	P-136	ASTM D2974-87	PMST/1160		
603116002	P-135	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603116003	P-136	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316

REPORT OF LABORATORY ANALYSIS

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Laboratory: Pace Analytical
Address: 9608 Currier Blvd.
City/State/Zip: Lenexa, Ks 66219
Telephone: (913) 599-5665

Lab. Reference No. or Episode No.:

Attention: Craig Stevens

Project Number: Delphi -- Bill to Heritage--

Sample Type

Client Name: Delphi Battery

Matrix

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Liquid	Solid	Gas	Number Contact	PCB						Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time											
Temp	Blank	-	01	2005	-	-	12/15/05	0800	X			1							
	P-25	-			0"	2"	11/30/05	1340		X		1	X	1	WCFU				1203116001
	P-135	-					12/13/05	1600		X		1	X						002
	P-136	-					12/13/05	1607		X		1	X						003
	P-79	-					12/01/05	1542		X		1	X						004
	P-10	-					11/29/05	1504		X		1	X						005
	P-63	-					12/01/05	1033		X		1	X						006
	P-28	-					11/30/05	1412		X		1	X						007
	P-12	-					11/29/05	1613		X		1	X						003
Rinsate	004	-			-	-	12/15/05	1350	X			2	X	2	AGIU				009

Special Instructions:

Temperature Upon Receipt:

5/15/2005

leather work

No ☐

2.5°C

Date/Time

Ⓢ Laboratory Comments:

December 28, 2005

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114

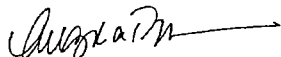
RE: Project: 603177
Project ID: Delphi Battery

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown
angela.brown@pacelabs.com

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

Page 1 of 10

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 603177

Project ID: Delphi Battery

Lab ID	Sample ID	Matrix	Date Collected	Date Received
603177001	P-178	Solid	12/19/05 09.40	12/20/05 14:10
603177002	P-186	Solid	12/19/05 10:00	12/20/05 14.10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 603177

Project ID: Delphi Battery

Lab ID	Sample ID	Method	Analytes Reported
603177001	P-178	ASTM D2974-87	1
		EPA 8082	9
603177002	P-186	ASTM D2974-87	1
		EPA 8082	9

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 603177

Project ID: Delphi Battery

The solid samples are reported on a dry weight basis.

Lab ID: 603177001 Date Collected: 12/19/05 09:40 Matrix: Solid
Sample ID: P-178 Date Received: 12/20/05 14:10

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	674	20	12/22/05 00:00	BAG	12/25/05 01:00	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	674	20	12/22/05 00:00	BAG	12/25/05 01:00	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	674	20	12/22/05 00:00	BAG	12/25/05 01:00	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	674	20	12/22/05 00:00	BAG	12/25/05 01:00	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	674	20	12/22/05 00:00	BAG	12/25/05 01:00	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	1350	ug/kg	674	20	12/22/05 00:00	BAG	12/25/05 01:00	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	674	20	12/22/05 00:00	BAG	12/25/05 01:00	WA	11096-82-5		
Tetrachloro-m-xylene (S)	0	%	33-135	20	12/22/05 00:00	BAG	12/25/05 01:00	WA	877-09-8	1	
Decachlorobiphenyl (S)	0	%	28-150	20	12/22/05 00:00	BAG	12/25/05 01:00	WA	2051-24-3	1	

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	2.0	%	0.10	1	12/22/05 00:00	JDM
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Date: 12/28/2005

Page 4 of 10

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ANALYTICAL RESULTS

Project: 603177

Project ID: Delphi Battery

The solid samples are reported on a dry weight basis.

Lab ID: 603177002	Date Collected: 12/19/05 10:00	Matrix: Solid
Sample ID: P-186	Date Received: 12/20/05 14:10	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	1000	1	12/22/05 00:00	BAG	12/25/05 01:21	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	1000	1	12/22/05 00:00	BAG	12/25/05 01:21	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	1000	1	12/22/05 00:00	BAG	12/25/05 01:21	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	1000	1	12/22/05 00:00	BAG	12/25/05 01:21	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	ND	ug/kg	1000	1	12/22/05 00:00	BAG	12/25/05 01:21	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	ND	ug/kg	1000	1	12/22/05 00:00	BAG	12/25/05 01:21	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	1000	1	12/22/05 00:00	BAG	12/25/05 01:21	WA	11096-82-5		
Tetrachloro-m-xylene (S)	93	%	33-135	1	12/22/05 00:00	BAG	12/25/05 01:21	WA	877-09-8		
Decachlorobiphenyl (S)	87	%	28-150	1	12/22/05 00:00	BAG	12/25/05 01:21	WA	2051-24-3		

Net Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	4.0	%	0.10	1	12/22/05 00:00	JDM
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Date: 12/28/2005

Page 5 of 10

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ANALYTICAL RESULTS QUALIFIERS

Project: 603177

Project ID: Delphi Battery

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

[1] Surrogate diluted out.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 603177

Project ID: Delphi Battery

QC Batch:	OEXT/1711	Analysis Method:	EPA 8082			
QC Batch Method:	EPA 3550	Analysis Description:	8082 GCS PCB			
Associated Lab Samples:	603090016	603090017	603090018	603090019	603090020	603090021
	603090022	603090023	603090024	603090025	603177001	603177002

METHOD BLANK: 26029

Associated Lab Samples: 603177001 603177002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	88	33-135	
Decachlorobiphenyl (S)	%	96	28-150	

LABORATORY CONTROL SAMPLE: 26030

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	174	104	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	173	104	55-120	
Tetrachloro-m-xylene (S)	%			90	33-135	
Decachlorobiphenyl (S)	%			99	28-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26031 26032

Parameter	Units	603024001 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	166	133	136	80	82	46-120	2	17	
PCB-1260 (Aroclor 1260)	ug/kg	ND	166	188	147	113	88	33-136	25	21	1
Tetrachloro-m-xylene (S)	%					73	72	33-135			
Decachlorobiphenyl (S)	%					82	79	28-150			

Date: 12/28/2005

Page 7 of 10

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QUALITY CONTROL DATA

Project: 603177

Project ID: Delphi Battery

QC Batch:	PMST/1163	Analysis Method:	ASTM D2974-87
QC Batch Method:	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture
Associated Lab Samples:	603157001	603157002	603157003 603157004 603177001 603177002

METHOD BLANK: 26202

Associated Lab Samples: 603177001 603177002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 26203

Parameter	Units	603155005 Result	DUP Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.1	16.8	2	20	

Date: 12/28/2005

Page 8 of 10

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QUALITY CONTROL DATA QUALIFIERS

Project: 603177

Project ID: Delphi Battery

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

MDL - Adjusted Method Detection Limit.

S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

- [1] The calculated RPD was outside QC acceptance limits. Successful recovery of the LCS demonstrates that the analytical system was in control.

Date: 12/28/2005

Page 9 of 10

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 603177

Project ID: Delphi Battery

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
603177001	P-178	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603177002	P-186	EPA 3550	OEXT/1711	EPA 8082	GCSV/1316
603177001	P-178	ASTM D2974-87	PMST/1163		
603177002	P-186	ASTM D2974-87	PMST/1163		

REPORT OF LABORATORY ANALYSIS

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December 21, 2005

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114

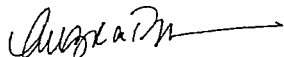
RE: Project: 602846
Project ID: DELPHI

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on December 13, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown
angela.brown@pacelabs.com

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

Page 1 of 12

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project. 602846

Project ID DELPHI

Lab ID	Sample ID	Matrix	Date Collected	Date Received
602846001	Rinsate 003	Water	12/13/05 15:12	12/13/05 17:01
602846002	P-04	Solid	11/29/05 10 07	12/13/05 17:01
602846003	P-118	Solid	12/12/05 16:40	12/13/05 17 01

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 602846

Project ID: DELPHI

Lab ID	Sample ID	Method	Analytes Reported
602846001	Rinsate 003	EPA 8082	9
602846002	P-04	ASTM D2974-87	1
		EPA 8082	9
602846003	P-118	ASTM D2974-87	1
		EPA 8082	9

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602846

Project ID: DELPHI

The solid samples are reported on a dry weight basis.

Lab ID: 602846001	Date Collected: 12/13/05 15:12	Matrix: Water
Sample ID: Rinsate 003	Date Received: 12/13/05 17:01	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3510

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/L	1.0	1	12/14/05 00:00	JDM	12/15/05 12:44	EMA	12674-11-2
PCB-1221 (Aroclor 1221)	ND ug/L	1.0	1	12/14/05 00:00	JDM	12/15/05 12:44	EMA	11104-28-2
PCB-1232 (Aroclor 1232)	ND ug/L	1.0	1	12/14/05 00:00	JDM	12/15/05 12:44	EMA	11141-16-5
PCB-1242 (Aroclor 1242)	ND ug/L	1.0	1	12/14/05 00:00	JDM	12/15/05 12:44	EMA	53469-21-9
PCB-1248 (Aroclor 1248)	ND ug/L	1.0	1	12/14/05 00:00	JDM	12/15/05 12:44	EMA	12672-29-6
PCB-1254 (Aroclor 1254)	ND ug/L	1.0	1	12/14/05 00:00	JDM	12/15/05 12:44	EMA	11097-69-1
PCB-1260 (Aroclor 1260)	ND ug/L	1.0	1	12/14/05 00:00	JDM	12/15/05 12:44	EMA	11096-82-5
1,2,3,4-tetrachloro-m-xylene (S)	72 %	30-118	1	12/14/05 00:00	JDM	12/15/05 12:44	EMA	877-09-8
Decachlorobiphenyl (S)	61 %	35-120	1	12/14/05 00:00	JDM	12/15/05 12:44	EMA	2051-24-3

Date: 12/21/2005

Page 4 of 12

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602846

Project ID: DELPHI

The solid samples are reported on a dry weight basis.

Lab ID: 602846002

Date Collected: 11/29/05 10:07

Matrix: Solid

Sample ID: P-04

Date Received: 12/13/05 17:01

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/kg	1730	50	12/15/05 00:00	BAG	12/18/05 02:16	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND ug/kg	1730	50	12/15/05 00:00	BAG	12/18/05 02:16	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND ug/kg	1730	50	12/15/05 00:00	BAG	12/18/05 02:16	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND ug/kg	1730	50	12/15/05 00:00	BAG	12/18/05 02:16	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	9020 ug/kg	1730	50	12/15/05 00:00	BAG	12/18/05 02:16	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	7750 ug/kg	1730	50	12/15/05 00:00	BAG	12/18/05 02:16	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND ug/kg	1730	50	12/15/05 00:00	BAG	12/18/05 02:16	WA	11096-82-5		
Tetrachloro-m-xylene (S)	0 %	33-135	50	12/15/05 00:00	BAG	12/18/05 02:16	WA	877-09-8	1	
Decachlorobiphenyl (S)	0 %	28-150	50	12/15/05 00:00	BAG	12/18/05 02:16	WA	2051-24-3	1	

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture

4.5 %

0.10

1

12/16/05 00:00 JDM

Date: 12/21/2005

Page 5 of 12

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602846

Project ID: DELPHI

The solid samples are reported on a dry weight basis

Lab ID: 602846003 Date Collected: 12/12/05 16:40 Matrix: Solid
Sample ID: P-118 Date Received: 12/13/05 17:01

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	34.2	1	12/15/05 00:00	BAG	12/17/05 10:46	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	34.2	1	12/15/05 00:00	BAG	12/17/05 10:46	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	34.2	1	12/15/05 00:00	BAG	12/17/05 10:46	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	34.2	1	12/15/05 00:00	BAG	12/17/05 10:46	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	153	ug/kg	34.2	1	12/15/05 00:00	BAG	12/17/05 10:46	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	102	ug/kg	34.2	1	12/15/05 00:00	BAG	12/17/05 10:46	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	34.2	1	12/15/05 00:00	BAG	12/17/05 10:46	WA	11096-82-5		
1,2,4,5-tetrachloro-m-xylene (S)	79	%	33-135	1	12/15/05 00:00	BAG	12/17/05 10:46	WA	877-09-8		
Decachlorobiphenyl (S)	70	%	28-150	1	12/15/05 00:00	BAG	12/17/05 10:46	WA	2051-24-3		

Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	3.7	%	0.10	1	12/16/05 00:00	JDM
------------------	-----	---	------	---	----------------	-----

Date 12/21/2005

Page 6 of 12

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS QUALIFIERS

Project: 602846

Project ID: DELPHI

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

[1] Surrogate is diluted out.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 602846

Project ID: DELPHI

QC Batch: OEXT/1616

Analysis Method: EPA 8082

QC Batch Method: EPA 3510

Analysis Description: 8082 GCS PCB

Associated Lab Samples 602846001

METHOD BLANK: 22904

Associated Lab Samples 602846001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
CB-1016 (Aroclor 1016)	ug/L	ND	1.0	
CB-1221 (Aroclor 1221)	ug/L	ND	1.0	
PCB-1232 (Aroclor 1232)	ug/L	ND	1.0	
CB-1242 (Aroclor 1242)	ug/L	ND	1.0	
CB-1248 (Aroclor 1248)	ug/L	ND	1.0	
PCB-1254 (Aroclor 1254)	ug/L	ND	1.0	
PCB-1260 (Aroclor 1260)	ug/L	ND	1.0	
trachloro-m-xylene (S)	%	62	30-118	
ecachlorobiphenyl (S)	%	63	35-120	

LABORATORY CONTROL SAMPLE: 22905

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	2.9	58	47-115	
PCB-1260 (Aroclor 1260)	ug/L	5	3.6	71	54-115	
trachloro-m-xylene (S)	%			81	30-118	
ecachlorobiphenyl (S)	%			64	35-120	

Date: 12/21/2005

Page 8 of 12

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 602846

Project ID: DELPHI

QC Batch: OEXT/1623

Analysis Method: EPA 8082

QC Batch Method: EPA 3550

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 602834001 602834002 602846002 602846003

METHOD BLANK: 23332

Associated Lab Samples: 602846002 602846003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	77	33-135	
Decachlorobiphenyl (S)	%	78	28-150	

LABORATORY CONTROL SAMPLE: 23333

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	136	81	59-115	1
PCB-1260 (Aroclor 1260)	ug/kg	167	146	88	55-120	
Tetrachloro-m-xylene (S)	%			82	33-135	
Decachlorobiphenyl (S)	%			77	28-150	

Date: 12/21/2005

Page 9 of 12

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 602846

Project ID: DELPHI

QC Batch:	PMST/1151	Analysis Method:	ASTM D2974-87
QC Batch Method	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture
Associated Lab Samples:	602810001	602846002	602846003 602938001

METHOD BLANK. 23997

Associated Lab Samples: 602846002 602846003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE 24011

Parameter	Units	602938001 Result	DUP Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.7	17.7	0	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA QUALIFIERS

Project: 602846

Project ID: DELPHI

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

[1] The matrix spike recoveries are unacceptable. Batch acceptance based on LCS recovery.

Date: 12/21/2005

Page 11 of 12

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

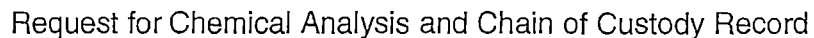
Project: 602846

Project ID: DELPHI

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
602846001	Rinsate 003	EPA 3510	OEXT/1616	EPA 8082	GCSV/1270
602846002	P-04	EPA 3550	OEXT/1623	EPA 8082	GCSV/1279
602846003	P-118	EPA 3550	OEXT/1623	EPA 8082	GCSV/1279
602846002	P-04	ASTM D2974-87	PMST/1151		
602846003	P-118	ASTM D2974-87	PMST/1151		

REPORT OF LABORATORY ANALYSIS

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Laboratory: Pace Analytica
Address: 9608 Loiret Blvd.
City/State/Zip: Lenexa, KS 66129
Telephone: (913) 599-5665

Lab. Reference No. or Episode No.:

Attention: Craig Stevens

Project Number: Delphi -- Bill To Heritage --

Sample Type

Client Name: Delphi Battery

Matrix

[illegible]

Sampler (signature)

Sampler (signature)

Special Instructions:

Relinquished By (signature)



Date/Time

Received By (signature)

Date/Time: _____

Ice Present in Container:

Temperature Upon Receipt:

1  / 

Relinquished By (signature)

Date/Time

Received By (signature)

Date/Time

Laboratory Comments:

2

December 09, 2005

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114

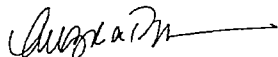
RE: Project: 602523
Project ID: DELPHI BATTERY

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on December 02, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Angie Brown
angela.brown@pacelabs.com

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

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REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 602523

Project ID: DELPHI BATTERY

Lab ID	Sample ID	Matrix	Date Collected	Date Received
602523001	RINSATE 002	Water	12/01/05 16:53	12/02/05 17:15
602523002	P-50	Solid	12/01/05 15:40	12/02/05 17:15
602523003	P-26	Solid	11/30/05 13:51	12/02/05 17:15
602523004	P-68	Solid	12/01/05 11:18	12/02/05 17:15
602523005	P-20_SS-1	Solid	12/01/05 13:50	12/02/05 17:15
602523006	P-20_SS-2	Solid	12/01/05 13:45	12/02/05 17:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 602523

Project ID: DELPHI BATTERY

Lab ID	Sample ID	Method	Analytes Reported
602523001	RINSATE 002	EPA 8082	9
602523002	P-50	ASTM D2974-87	1
		EPA 8082	9
602523003	P-26	ASTM D2974-87	1
		EPA 8082	9
602523004	P-68	ASTM D2974-87	1
		EPA 8082	9
602523005	P-20_SS-1	ASTM D2974-87	1
		EPA 8082	9
602523006	P-20_SS-2	ASTM D2974-87	1
		EPA 8082	9

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602523

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 602523001	Date Collected: 12/01/05 16:53	Matrix: Water
Sample ID: RINSATE 002	Date Received: 12/02/05 17:15	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	-------

GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3510

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/L	1.0	1	12/05/05 00:00	AJA	12/06/05 03:16	WA	12674-11-2
PCB-1221 (Aroclor 1221)	ND ug/L	1.0	1	12/05/05 00:00	AJA	12/06/05 03:16	WA	11104-28-2
PCB-1232 (Aroclor 1232)	ND ug/L	1.0	1	12/05/05 00:00	AJA	12/06/05 03:16	WA	11141-16-5
PCB-1242 (Aroclor 1242)	ND ug/L	1.0	1	12/05/05 00:00	AJA	12/06/05 03:16	WA	53469-21-9
PCB-1248 (Aroclor 1248)	ND ug/L	1.0	1	12/05/05 00:00	AJA	12/06/05 03:16	WA	12672-29-6
PCB-1254 (Aroclor 1254)	ND ug/L	1.0	1	12/05/05 00:00	AJA	12/06/05 03:16	WA	11097-69-1
PCB-1260 (Aroclor 1260)	ND ug/L	1.0	1	12/05/05 00:00	AJA	12/06/05 03:16	WA	11096-82-5
Tetrachloro-m-xylene (S)	70 %	30-118	1	12/05/05 00:00	AJA	12/06/05 03:16	WA	877-09-8
Decachlorobiphenyl (S)	85 %	35-120	1	12/05/05 00:00	AJA	12/06/05 03:16	WA	2051-24-3

Date: 12/09/2005

Page 4 of 15

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602523

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis

Lab ID: 602523002	Date Collected: 12/01/05 15:40	Matrix: Solid
Sample ID: P-50	Date Received: 12/02/05 17:15	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	34.1	1	12/05/05 00:00	MAK	12/06/05 18:50	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	34.1	1	12/05/05 00:00	MAK	12/06/05 18:50	WA	11104-28-2		
CB-1232 (Aroclor 1232)	ND	ug/kg	34.1	1	12/05/05 00:00	MAK	12/06/05 18:50	WA	11141-16-5		
CB-1242 (Aroclor 1242)	ND	ug/kg	34.1	1	12/05/05 00:00	MAK	12/06/05 18:50	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	345	ug/kg	34.1	1	12/05/05 00:00	MAK	12/06/05 18:50	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	ND	ug/kg	34.1	1	12/05/05 00:00	MAK	12/06/05 18:50	WA	11097-69-1		
CB-1260 (Aroclor 1260)	ND	ug/kg	34.1	1	12/05/05 00:00	MAK	12/06/05 18:50	WA	11096-82-5		
tetrachloro-m-xylene (S)	71	%	33-135	1	12/05/05 00:00	MAK	12/06/05 18:50	WA	877-09-8		
Decachlorobiphenyl (S)	81	%	28-150	1	12/05/05 00:00	MAK	12/06/05 18:50	WA	2051-24-3		

Let Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	3.5	%	0.10	1	12/05/05 00:00	JDM
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Date: 12/09/2005

Page 5 of 15

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ANALYTICAL RESULTS

Project: 602523

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 602523003	Date Collected: 11/30/05 13:51	Matrix: Solid
Sample ID: P-26	Date Received: 12/02/05 17:15	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/kg	34.3	1	12/05/05 00:00	MAK	12/06/05 19:15	WA	12674-11-2
PCB-1221 (Aroclor 1221)	ND ug/kg	34.3	1	12/05/05 00:00	MAK	12/06/05 19:15	WA	11104-28-2
PCB-1232 (Aroclor 1232)	ND ug/kg	34.3	1	12/05/05 00:00	MAK	12/06/05 19:15	WA	11141-16-5
PCB-1242 (Aroclor 1242)	ND ug/kg	34.3	1	12/05/05 00:00	MAK	12/06/05 19:15	WA	53469-21-9
PCB-1248 (Aroclor 1248)	269 ug/kg	34.3	1	12/05/05 00:00	MAK	12/06/05 19:15	WA	12672-29-6
PCB-1254 (Aroclor 1254)	ND ug/kg	34.3	1	12/05/05 00:00	MAK	12/06/05 19:15	WA	11097-69-1
PCB-1260 (Aroclor 1260)	ND ug/kg	34.3	1	12/05/05 00:00	MAK	12/06/05 19:15	WA	11096-82-5
Tetrachloro-m-xylene (S)	72 %	33-135	1	12/05/05 00:00	MAK	12/06/05 19:15	WA	877-09-8
Decachlorobiphenyl (S)	84 %	28-150	1	12/05/05 00:00	MAK	12/06/05 19:15	WA	2051-24-3

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture

3.9 %

0.10

1

12/05/05 00:00 JDM

Date: 12/09/2005

Page 6 of 15

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602523

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 602523004	Date Collected: 12/01/05 11:18	Matrix: Solid
Sample ID: P-68	Date Received: 12/02/05 17:15	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	343	10	12/05/05 00:00	MAK	12/06/05 19:40	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	343	10	12/05/05 00:00	MAK	12/06/05 19:40	WA	11104-28-2		
CB-1232 (Aroclor 1232)	ND	ug/kg	343	10	12/05/05 00:00	MAK	12/06/05 19:40	WA	11141-16-5		
CB-1242 (Aroclor 1242)	ND	ug/kg	343	10	12/05/05 00:00	MAK	12/06/05 19:40	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	1770	ug/kg	343	10	12/05/05 00:00	MAK	12/06/05 19:40	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	ND	ug/kg	343	10	12/05/05 00:00	MAK	12/06/05 19:40	WA	11097-69-1		
CB-1260 (Aroclor 1260)	ND	ug/kg	343	10	12/05/05 00:00	MAK	12/06/05 19:40	WA	11096-82-5		
tetrachloro-m-xylene (S)	95	%	33-135	10	12/05/05 00:00	MAK	12/06/05 19:40	WA	877-09-8		
Decachlorobiphenyl (S)	102	%	28-150	10	12/05/05 00:00	MAK	12/06/05 19:40	WA	2051-24-3		

Met Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	3.9	%	0.10	1	12/05/05 00:00	JDM
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Date: 12/09/2005

Page 7 of 15

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602523

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 602523005	Date Collected: 12/01/05 13.50	Matrix: Solid
Sample ID: P-20_SS-1	Date Received: 12/02/05 17.15	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No	Qual	RegLm
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/kg	391	10	12/05/05 00:00	MAK	12/06/05 20:05	WA	12674-11-2
PCB-1221 (Aroclor 1221)	ND ug/kg	391	10	12/05/05 00:00	MAK	12/06/05 20:05	WA	11104-28-2
PCB-1232 (Aroclor 1232)	ND ug/kg	391	10	12/05/05 00:00	MAK	12/06/05 20:05	WA	11141-16-5
PCB-1242 (Aroclor 1242)	ND ug/kg	391	10	12/05/05 00:00	MAK	12/06/05 20:05	WA	53469-21-9
PCB-1248 (Aroclor 1248)	1650 ug/kg	391	10	12/05/05 00:00	MAK	12/06/05 20:05	WA	12672-29-6
PCB-1254 (Aroclor 1254)	ND ug/kg	391	10	12/05/05 00:00	MAK	12/06/05 20:05	WA	11097-69-1
PCB-1260 (Aroclor 1260)	ND ug/kg	391	10	12/05/05 00:00	MAK	12/06/05 20:05	WA	11096-82-5
Tetrachloro-m-xylene (S)	94 %	33-135	10	12/05/05 00:00	MAK	12/06/05 20:05	WA	877-09-8
Decachlorobiphenyl (S)	99 %	28-150	10	12/05/05 00:00	MAK	12/06/05 20:05	WA	2051-24-3

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	15.9 %	0.10	1	12/05/05 00:00	JDM
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Date: 12/09/2005

Page 8 of 15

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602523

Project ID: DELPHI BATTERY

The solid samples are reported on a dry weight basis.

Lab ID: 602523006	Date Collected: 12/01/05 13.45	Matrix: Solid
Sample ID: P-20_SS-2	Date Received: 12/02/05 17 15	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

9082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	201	5	12/05/05 00:00	MAK	12/06/05 20:30	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	201	5	12/05/05 00:00	MAK	12/06/05 20:30	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	201	5	12/05/05 00:00	MAK	12/06/05 20:30	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	201	5	12/05/05 00:00	MAK	12/06/05 20:30	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	1260	ug/kg	201	5	12/05/05 00:00	MAK	12/06/05 20:30	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	ND	ug/kg	201	5	12/05/05 00:00	MAK	12/06/05 20:30	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	201	5	12/05/05 00:00	MAK	12/06/05 20:30	WA	11096-82-5		
tetrachloro-m-xylene (S)	90	%	33-135	5	12/05/05 00:00	MAK	12/06/05 20:30	WA	877-09-8		
Decachlorobiphenyl (S)	95	%	28-150	5	12/05/05 00:00	MAK	12/06/05 20:30	WA	2051-24-3		

Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	18.0	%	0.10	1	12/05/05 00:00	JDM
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Date: 12/09/2005

Page 9 of 15

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ANALYTICAL RESULTS QUALIFIERS

Project 602523

Project ID: DELPHI BATTERY

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project 602523

Project ID: DELPHI BATTERY

QC Batch: OEXT/1544

Analysis Method: EPA 8082

QC Batch Method: EPA 3550

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 602523002 602523003 602523004 602523005 602523006

METHOD BLANK: 20242

Associated Lab Samples: 602523002 602523003 602523004 602523005 602523006

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
1,2,4-trichloro-m-xylene (S)	%	73	33-135	
1,2,4-trichlorobiphenyl (S)	%	90	28-150	

LABORATORY CONTROL SAMPLE: 20243

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	147	88	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	195	117	55-120	
1,2,4-trichloro-m-xylene (S)	%			74	33-135	
1,2,4-trichlorobiphenyl (S)	%			90	28-150	

ATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20244

20245

Parameter	Units	602523002 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	172	222	235	128	136	46-120	6	17.1	
PCB-1260 (Aroclor 1260)	ug/kg	ND	172	419	451	243	261	33-136	7	21.1	
1,2,4-trichloro-m-xylene (S)	%					65	67	33-135			
1,2,4-trichlorobiphenyl (S)	%					87	92	28-150			

Date: 12/09/2005

Page 11 of 15

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 602523

Project ID: DELPHI BATTERY

QC Batch: OEXT/1545

Analysis Method: EPA 8082

QC Batch Method: EPA 3510

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 602523001

METHOD BLANK: 20246

Associated Lab Samples: 602523001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	1.0	
PCB-1221 (Aroclor 1221)	ug/L	ND	1.0	
PCB-1232 (Aroclor 1232)	ug/L	ND	1.0	
PCB-1242 (Aroclor 1242)	ug/L	ND	1.0	
PCB-1248 (Aroclor 1248)	ug/L	ND	1.0	
PCB-1254 (Aroclor 1254)	ug/L	ND	1.0	
PCB-1260 (Aroclor 1260)	ug/L	ND	1.0	
Tetrachloro-m-xylene (S)	%	66	30-118	
Decachlorobiphenyl (S)	%	82	35-120	

LABORATORY CONTROL SAMPLE: 20247

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	4.0	81	47-115	
PCB-1260 (Aroclor 1260)	ug/L	5	5.3	106	54-115	
Tetrachloro-m-xylene (S)	%			70	30-118	
Decachlorobiphenyl (S)	%			87	35-120	

Date: 12/09/2005

Page 12 of 15

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 602523

Project ID: DELPHI BATTERY

QC Batch: PMST/1137 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 602523002 602523003 602523004 602523005 602523006

METHOD BLANK: 20311

Associated Lab Samples: 602523002 602523003 602523004 602523005 602523006

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 20387

Parameter	Units	602523003 Result	DUP Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	3.9	3.7	7	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA QUALIFIERS

Project: 602523

Project ID: DELPHI BATTERY

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

[1] Results for this analyte was outside of acceptable MS/MSD recovery limits due to matrix interferences.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 602523

Project ID: DELPHI BATTERY

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
602523002	P-50	EPA 3550	OEXT/1544	EPA 8082	GCSV/1235
602523003	P-26	EPA 3550	OEXT/1544	EPA 8082	GCSV/1235
602523004	P-68	EPA 3550	OEXT/1544	EPA 8082	GCSV/1235
602523005	P-20_SS-1	EPA 3550	OEXT/1544	EPA 8082	GCSV/1235
602523006	P-20_SS-2	EPA 3550	OEXT/1544	EPA 8082	GCSV/1235
602523001	RINSATE 002	EPA 3510	OEXT/1545	EPA 8082	GCSV/1234
602523002	P-50	ASTM D2974-87	PMST/1137		
602523003	P-26	ASTM D2974-87	PMST/1137		
602523004	P-68	ASTM D2974-87	PMST/1137		
602523005	P-20_SS-1	ASTM D2974-87	PMST/1137		
602523006	P-20_SS-2	ASTM D2974-87	PMST/1137		

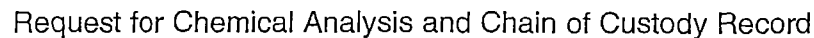
Date: 12/09/2005

Page 15 of 15

REPORT OF LABORATORY ANALYSIS

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Laboratory Comments:

2

December 02, 2005

CRAIG STEVENS
BURNS & MCDONNELL WASTE CONSUL
9400 WARD PARKWAY
Kansas City, MO 64114

RE: Project: 602413
Project ID: DELPHI-OLATHE, KS

Dear CRAIG STEVENS:

Enclosed are the analytical results for sample(s) received by the laboratory on December 01, 2005. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mary Jane Walls for
Angie Brown
angela.brown@pacelabs.com

Arkansas Certification Number 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number 9205/9935
Utah Certification Number: 9135995665

Enclosures

Page 1 of 13

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 602413

Project ID: DELPHI-OLATHE, KS

Lab ID	Sample ID	Matrix	Date Collected	Date Received
602413001	RINSEATE001_DELPHI	Water	11/30/05 08:40	12/01/05 07:52
602413002	P-15_DELPHI	Solid	11/30/05 09:14	12/01/05 07:52
602413003	P-03_DELPHI	Solid	11/30/05 09:10	12/01/05 07:52
602413004	P-02_DELPHI	Solid	11/30/05 17:00	12/01/05 07:52

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SAMPLE ANALYTE COUNT

Project: 602413

Project ID: DELPHI-OLATHE, KS

Lab ID	Sample ID	Method	Analytes Reported
602413001	RINSEATE001_DELPHI	EPA 8082	9
602413002	P-15_DELPHI	ASTM D2974-87	1
		EPA 8082	9
602413003	P-03_DELPHI	ASTM D2974-87	1
		EPA 8082	9
602413004	P-02_DELPHI	ASTM D2974-87	1
		EPA 8082	9

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602413

Project ID: DELPHI-OLATHE, KS

The solid samples are reported on a dry weight basis

Lab ID: 602413001	Date Collected: 11/30/05 08:40	Matrix: Water
Sample ID: RINSEATE001_DELPHI	Date Received: 12/01/05 07:52	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3510

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND ug/L	1.0	1	12/01/05 00:00	JDM	12/01/05 18:33	WA	12674-11-2
PCB-1221 (Aroclor 1221)	ND ug/L	1.0	1	12/01/05 00:00	JDM	12/01/05 18:33	WA	11104-28-2
PCB-1232 (Aroclor 1232)	ND ug/L	1.0	1	12/01/05 00:00	JDM	12/01/05 18:33	WA	11141-16-5
PCB-1242 (Aroclor 1242)	ND ug/L	1.0	1	12/01/05 00:00	JDM	12/01/05 18:33	WA	53469-21-9
PCB-1248 (Aroclor 1248)	ND ug/L	1.0	1	12/01/05 00:00	JDM	12/01/05 18:33	WA	12672-29-6
PCB-1254 (Aroclor 1254)	ND ug/L	1.0	1	12/01/05 00:00	JDM	12/01/05 18:33	WA	11097-69-1
PCB-1260 (Aroclor 1260)	ND ug/L	1.0	1	12/01/05 00:00	JDM	12/01/05 18:33	WA	11096-82-5
Tetrachloro-m-xylene (S)	74 %	30-118	1	12/01/05 00:00	JDM	12/01/05 18:33	WA	877-09-8
Decachlorobiphenyl (S)	76 %	35-120	1	12/01/05 00:00	JDM	12/01/05 18:33	WA	2051-24-3

Date: 12/02/2005

Page 4 of 13

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ANALYTICAL RESULTS

Project: 602413
Project ID DELPHI-OLATHE, KS
The solid samples are reported on a dry weight basis

Lab ID: 602413002 Date Collected: 11/30/05 09:14 Matrix: Solid
Sample ID: P-15_DELPHI Date Received: 12/01/05 07:52

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	17200	500	12/01/05 00:00	MAK	12/02/05 11:16	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	17200	500	12/01/05 00:00	MAK	12/02/05 11:16	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	17200	500	12/01/05 00:00	MAK	12/02/05 11:16	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	17200	500	12/01/05 00:00	MAK	12/02/05 11:16	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	105000	ug/kg	17200	500	12/01/05 00:00	MAK	12/02/05 11:16	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	35700	ug/kg	17200	500	12/01/05 00:00	MAK	12/02/05 11:16	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	17200	500	12/01/05 00:00	MAK	12/02/05 11:16	WA	11096-82-5		
tetrachloro-m-xylene (S)	0	%	33-135	500	12/01/05 00:00	MAK	12/02/05 11:16	WA	877-09-8	1	
Decachlorobiphenyl (S)	0	%	28-150	500	12/01/05 00:00	MAK	12/02/05 11:16	WA	2051-24-3	1	

Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	4.1	%	0.10	1	12/01/05 00:00	MAK
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ANALYTICAL RESULTS

Project: 602413

Project ID: DELPHI-OLATHE, KS

The solid samples are reported on a dry weight basis.

Lab ID: 602413003 Date Collected: 11/30/05 09:10 Matrix: Solid
Sample ID: P-03_DELPHI Date Received: 12/01/05 07:52

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLm
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	-------

GC Semivolatiles

8082 GCS PCB

Preparation Method. EPA 3550

Analytical Method. EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	34.6	1	12/01/05 00:00	MAK	12/02/05 10:26	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	34.6	1	12/01/05 00:00	MAK	12/02/05 10:26	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	34.6	1	12/01/05 00:00	MAK	12/02/05 10:26	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	34.6	1	12/01/05 00:00	MAK	12/02/05 10:26	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	71.0	ug/kg	34.6	1	12/01/05 00:00	MAK	12/02/05 10:26	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	53.9	ug/kg	34.6	1	12/01/05 00:00	MAK	12/02/05 10:26	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	34.6	1	12/01/05 00:00	MAK	12/02/05 10:26	WA	11096-82-5		
Tetrachloro-m-xylene (S)	80	%	33-135	1	12/01/05 00:00	MAK	12/02/05 10:26	WA	877-09-8		
Decachlorobiphenyl (S)	74	%	28-150	1	12/01/05 00:00	MAK	12/02/05 10:26	WA	2051-24-3		

Wet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	4.9	%	0.10	1	12/01/05 00:00	MAK
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Date: 12/02/2005

Page 6 of 13

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 602413

Project ID: DELPHI-OLATHE, KS

The solid samples are reported on a dry weight basis

Lab ID: 602413004	Date Collected: 11/30/05 17 00	Matrix Solid
Sample ID: P-02_DELPHI	Date Received: 12/01/05 07 52	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	34.9	1	12/01/05 00:00	MAK	12/02/05 10:51	WA	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	34.9	1	12/01/05 00:00	MAK	12/02/05 10:51	WA	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	34.9	1	12/01/05 00:00	MAK	12/02/05 10:51	WA	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	34.9	1	12/01/05 00:00	MAK	12/02/05 10:51	WA	53469-21-9		
PCB-1248 (Aroclor 1248)	48.9	ug/kg	34.9	1	12/01/05 00:00	MAK	12/02/05 10:51	WA	12672-29-6		
PCB-1254 (Aroclor 1254)	ND	ug/kg	34.9	1	12/01/05 00:00	MAK	12/02/05 10:51	WA	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	34.9	1	12/01/05 00:00	MAK	12/02/05 10:51	WA	11096-82-5		
Tetrachloro-m-xylene (S)	74	%	33-135	1	12/01/05 00:00	MAK	12/02/05 10:51	WA	877-09-8		
Decachlorobiphenyl (S)	74	%	28-150	1	12/01/05 00:00	MAK	12/02/05 10:51	WA	2051-24-3		

Vet Chemistry

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	5.6	%	0.10	1	12/01/05 00:00	MAK
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Date: 12/02/2005

Page 7 of 13

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS QUALIFIERS

Project: 602413

Project ID: DELPHI-OLATHE, KS

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

ANALYTE QUALIFIERS

[1] Surrogate diluted out.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 602413

Project ID: DELPHI-OLATHE, KS

QC Batch:	OEXT/1524	Analysis Method:	EPA 8082
QC Batch Method:	EPA 3550	Analysis Description:	8082 GCS PCB
Associated Lab Samples:	602413002	602413003	602413004

METHOD BLANK: 19327

Associated Lab Samples: 602413002 602413003 602413004

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
1,2,4-trichloro-m-xylene (S)	%	86	33-135	
1,2-dichlorobiphenyl (S)	%	83	28-150	

LABORATORY CONTROL SAMPLE: 19328

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	148	89	59-115	1
PCB-1260 (Aroclor 1260)	ug/kg	167	151	90	55-120	
1,2,4-trichloro-m-xylene (S)	%			85	33-135	
1,2-dichlorobiphenyl (S)	%			85	28-150	

Date: 12/02/2005

Page 9 of 13

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QUALITY CONTROL DATA

Project: 602413

Project ID: DELPHI-OLATHE, KS

QC Batch: OEXT/1525

Analysis Method: EPA 8082

QC Batch Method: EPA 3510

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 602413001

METHOD BLANK: 19339

Associated Lab Samples: 602413001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	1.0	
PCB-1221 (Aroclor 1221)	ug/L	ND	1.0	
PCB-1232 (Aroclor 1232)	ug/L	ND	1.0	
PCB-1242 (Aroclor 1242)	ug/L	ND	1.0	
PCB-1248 (Aroclor 1248)	ug/L	ND	1.0	
PCB-1254 (Aroclor 1254)	ug/L	ND	1.0	
PCB-1260 (Aroclor 1260)	ug/L	ND	1.0	
Tetrachloro-m-xylene (S)	%	69	30-118	
Decachlorobiphenyl (S)	%	71	35-120	

LABORATORY CONTROL SAMPLE: 19340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	3.9	78	47-115	1
PCB-1260 (Aroclor 1260)	ug/L	5	4.0	80	54-115	
Tetrachloro-m-xylene (S)	%			72	30-118	
Decachlorobiphenyl (S)	%			75	35-120	

Date: 12/02/2005

Page 10 of 13

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QUALITY CONTROL DATA

Project: 602413

Project ID: DELPHI-OLATHE, KS

QC Batch:	PMST/1135	Analysis Method:	ASTM D2974-87
QC Batch Method	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture
Associated Lab Samples:	602413002	602413003	602413004

METHOD BLANK: 19530

Associated Lab Samples: 602413002 602413003 602413004

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 19531

Parameter	Units	602413002 Result	DUP Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.1	3.8	9	20	"

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QUALITY CONTROL DATA QUALIFIERS

Project: 602413

Project ID DELPHI-OLATHE, KS

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

QUALITY CONTROL ANALYTE QUALIFIERS

[1] A matrix spike/matrix spike duplicate was not performed on this sample due to insufficient sample volume.

REPORT OF LABORATORY ANALYSIS

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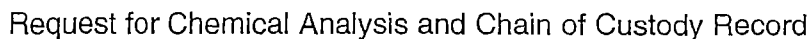
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 602413
Project ID: DELPHI-OLATHE, KS

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
602413002	P-15_DELPHI	EPA 3550	OEXT/1524	EPA 8082	GCSV/1225
602413003	P-03_DELPHI	EPA 3550	OEXT/1524	EPA 8082	GCSV/1225
602413004	P-02_DELPHI	EPA 3550	OEXT/1524	EPA 8082	GCSV/1225
602413001	RINSEATE001_DELPHI	EPA 3510	OEXT/1525	EPA 8082	GCSV/1223
602413002	P-15_DELPHI	ASTM D2974-87	PMST/1135		
602413003	P-03_DELPHI	ASTM D2974-87	PMST/1135		
602413004	P-02_DELPHI	ASTM D2974-87	PMST/1135		

REPORT OF LABORATORY ANALYSIS

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602413

Laboratory: Pace Analytical
Address: 9608 Lacey Blvd.
City/State/Zip: Lenexa, Kansas 66219
Telephone: (913) 599-5665

Document Control No: 113005

Lab. Reference No. or Episode No.:

Attention: CRAIG STEVENS

Project Number:

Sample Type

Client Name: Delphi - LATHI, 155

Matrix

[illegible]

Sampler (signature)

Sampler (signature)

Special Instructions:

24 HR TAT!

Relinquished By (signature)

Date/Time

Received By (signature)

Date/Time

Ice Present in Container:

Temperature Upon Receipt:

1. 1.2.5/2

Date/Time

Received By (signature)

Date/Time

Laboratory Comments:

2



Pace Analytical Services, Inc
9608 Loiret Blvd
Lenexa, KS 66219
Phone (913)599-5665
Fax: (913)599-1759

November 04, 2005

Mr. Todd Lewis
Delphi-E
400 West Dennis
Olathe, KS 66061

RE: Project: 601468
Project ID: 2005-33

Dear Mr. Lewis:

Enclosed are the analytical results for sample(s) received by the laboratory on November 02, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Connie Gardner
connie.gardner@pacelabs.com

Arkansas Certification Number: 05-008-0
California Certification Number: 02109CA
Illinois Certification Number: 001191
Iowa Certification Number: 118
Kansas/NELAP Certification Number: E-10116
Louisiana Certification Number: 03055
Minnesota Certification Number: 020-999-394
Oklahoma Certification Number: 9205/9935
Utah Certification Number: 9135995665

Enclosures

Page 1 of 7

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project 601468

Project ID. 2005-33

Lab ID	Sample ID	Matrix	Date Collected	Date Received
601468001	2005-33	Solid	11/02/05 16:15	11/02/05 17:33

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project 601468

Project ID: 2005-33

Lab ID	Sample ID	Method	Analytes Reported
601468001	2005-33	EPA 8082	9

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 601468

Project ID: 2005-33

The solid samples are reported on a wet weight basis.

Lab ID: 601468001	Date Collected: 11/02/05 16:15	Matrix: Solid
Sample ID: 2005-33	Date Received: 11/02/05 17:33	

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No	Qual	RegLmt
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GC Semivolatiles

8082 GCS PCB

Preparation Method: EPA 3550

Analytical Method: EPA 8082

PCB-1016 (Aroclor 1016)	ND	ug/kg	98800	1000	11/03/05 00:00	JDM	11/03/05 05:13	WAW	12674-11-2		
PCB-1221 (Aroclor 1221)	ND	ug/kg	98800	1000	11/03/05 00:00	JDM	11/03/05 05:13	WAW	11104-28-2		
PCB-1232 (Aroclor 1232)	ND	ug/kg	98800	1000	11/03/05 00:00	JDM	11/03/05 05:13	WAW	11141-16-5		
PCB-1242 (Aroclor 1242)	ND	ug/kg	98800	1000	11/03/05 00:00	JDM	11/03/05 05:13	WAW	53469-21-9		
PCB-1248 (Aroclor 1248)	882000	ug/kg	98800	1000	11/03/05 00:00	JDM	11/03/05 05:13	WAW	12672-29-6		
PCB-1254 (Aroclor 1254)	ND	ug/kg	98800	1000	11/03/05 00:00	JDM	11/03/05 05:13	WAW	11097-69-1		
PCB-1260 (Aroclor 1260)	ND	ug/kg	98800	1000	11/03/05 00:00	JDM	11/03/05 05:13	WAW	11096-82-5		
Tetrachloro-m-xylene (S)	0 %		33-135	1000	11/03/05 00:00	JDM	11/03/05 05:13	WAW	877-09-8	1	
Decachlorobiphenyl (S)	0 %		28-150	1000	11/03/05 00:00	JDM	11/03/05 05:13	WAW	2051-24-3	1	

Date: 11/04/2005

Page 4 of 7

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS QUALIFIERS

Project 601468

Project ID: 2005-33

PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content

ND - Not Detected at or above adjusted reporting limit

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

MDL - Adjusted Method Detection Limit

S - Surrogate

ANALYTE QUALIFIERS

[1] Surrogate diluted out.

Date: 11/04/2005

Page 5 of 7

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 601468

Project ID: 2005-33

QC Batch: OEXT/1289

Analysis Method: EPA 8082

QC Batch Method: EPA 3550

Analysis Description: 8082 GCS PCB

Associated Lab Samples: 601468001

METHOD BLANK: 11395

Associated Lab Samples: 601468001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	
Tetrachloro-m-xylene (S)	%	73	33-135	
Decachlorobiphenyl (S)	%	82	28-150	

LABORATORY CONTROL SAMPLE: 11396

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	147	88	59-115	
PCB-1260 (Aroclor 1260)	ug/kg	167	158	95	55-120	
Tetrachloro-m-xylene (S)	%			78	33-135	
Decachlorobiphenyl (S)	%			82	28-150	

Date 11/04/2005

Page 6 of 7

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QUALITY CONTROL DATA QUALIFIERS

Project 601468

Project ID 2005-33

QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

MDL - Adjusted Method Detection Limit.

S - Surrogate

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